PULP & PAPER

JUNE 1957

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Who are they?

...see page 51

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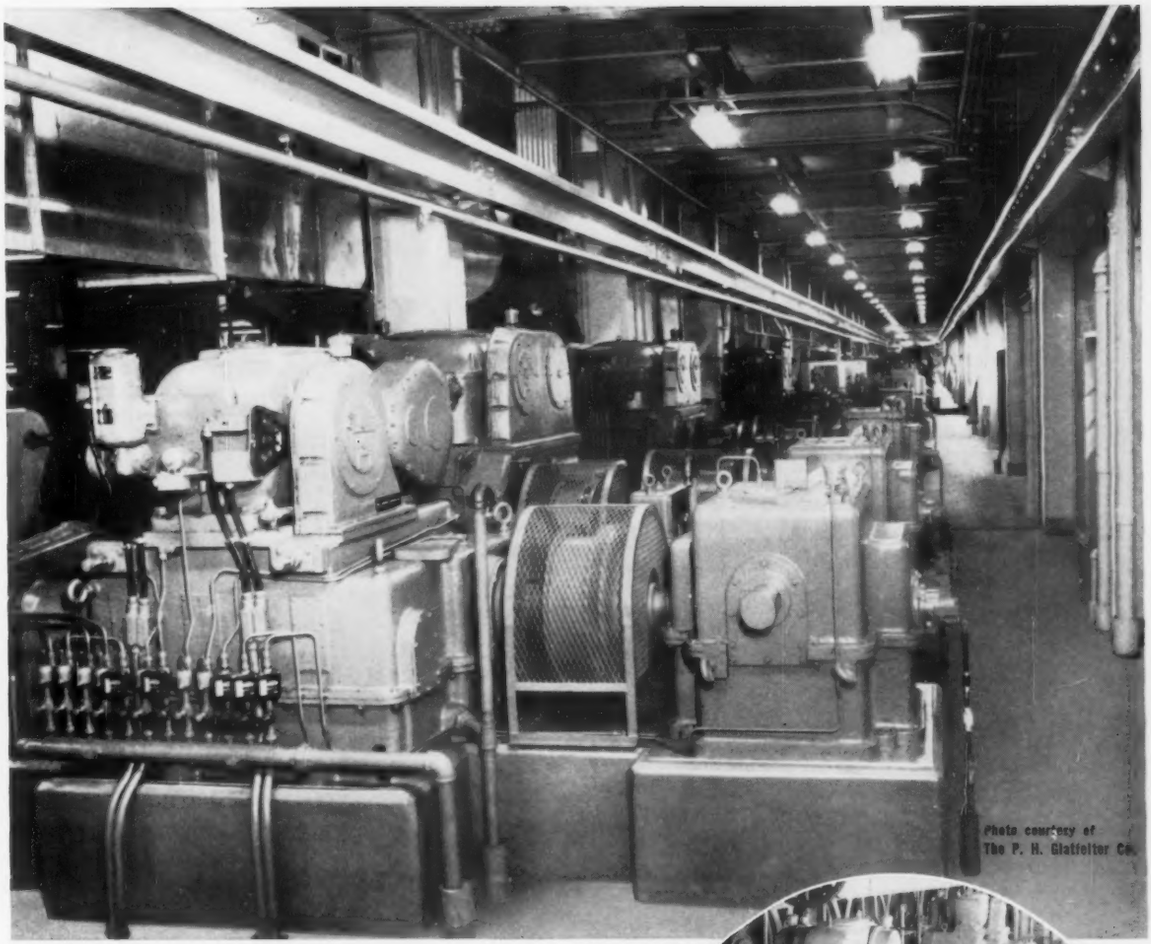

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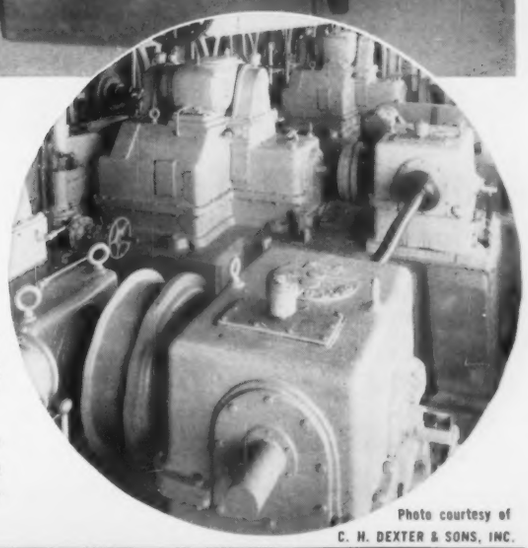

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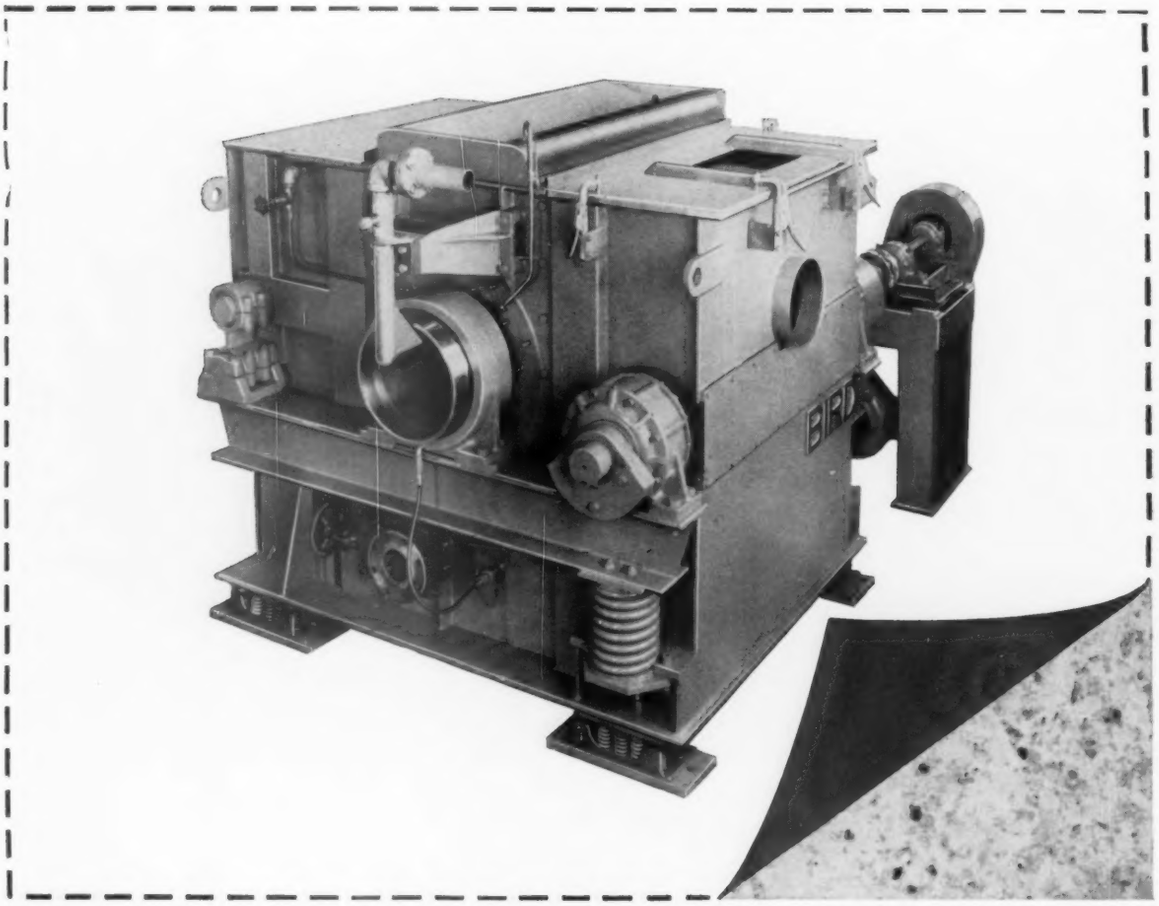

Reproduction of actual hand sheet showing the dirt removed from deink stock by Bird Vibrotor Screens.

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On unbleached sulphite of 1.5% consistency a Vibrotor Screen with .012" slotted plates delivers 55 air dry tons per day.

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On 2.0% board filler through .020" plates — 110 tons.

On 1.7% newsprint through .014" plates — 83 tons.

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PULP & PAPER

June 1957

VOLUME 31
NUMBER 6

READER'S GUIDED TOUR

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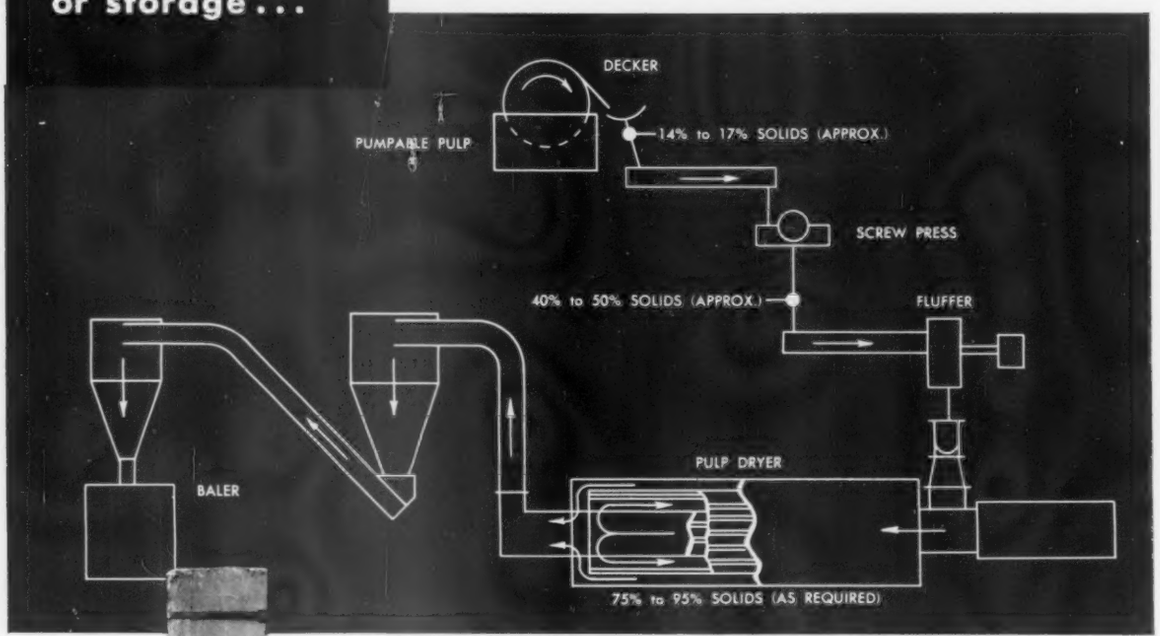

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Anonymous letters will not be considered but names may be withheld if desired.

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PULP & PAPER
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Chicago 26, Illinois

THE EDITOR READS HIS MAIL

Japanese Like South Brazil For Pulp Mill Site

—Tokyo

Editor: Regarding the letter you published last month from Eugene F. Horn, consulting forester in Brazil, it is true our company has made a study of pulp resources in the Amazon Valley. I met Mr. Horn in Belem, Brazil.

I have high regard for the future promise of the Amazonian forest. If, however, I plan to start pulp business in that country, I would build a mill in the southern part of Brazil as the first step. The reason is due to the availability of desirable species of wood as well as the high degree of industrial and commercial development of the area. In the near future, I intend to despatch another survey mission including a competent forester, and the final decision will be made after the completion of their tour.

Currently another mission on a pulpwood survey is out in the Philippines while two expert engineers on pulp manufacturing are touring South Africa now for the purpose of inspecting a pulp mill which utilizes hardwood. They already completed a trip through North America and Europe, and are expected to return soon. We count much on their bringing home interesting reports.

Our main product is rayon pulp with the annual output of about 160,000 metric tons. We produce approximately 22,000,000 lbs. of fine paper. Our annual consumption of pulpwood roughly amounts to 900,000 cubic meters. It is mostly Japanese red pine similar to Southern U.S. pine.

Y. YASUBA
Executive Vice President
Sanyo Pulp Co. Ltd.

Asking All Trade Groups To Join in Safety Drive

—Terrace Bay, Ont.

Editor: Since attending the National Safety Council meeting in Chicago (see PULP & PAPER coverage in Dec. 1956 issue) I have given considerable thought to development of a safety target for the entire pulp and paper industry. Here is an insignia which may well prove to be the basis for a major campaign.

We are planning on contracting immediately all Trade Associations in the pulp and paper industry in an effort to have them get behind the idea (see report on this projected campaign in PULP & PAPER, Dec. 1956 issue, page 58 entitled "All-Out Safety Drive").

At times, it just takes a simple target to trigger the kind of action that gets outstanding results. For quite a while I have been trying to come up with just such a target at which we could all shoot collectively.

Now, for what it's worth, here's a target for pulp and paper to work on: "The Safest Industry in Business." And why not? Why should we have to take a back seat to communications, electrical equipment, automobiles, aircraft, steel, rubber, chemicals, shipbuilding, textiles and other industries? Surely we have as much on the ball as any industry in business.

There's a lot of merit and magic in setting sights on a target and really believing that results can be achieved. But even the strongest faith without some healthy effort is of little use.

So let's go to work on our target . . . make widespread use of the roughed out insignia for our campaign . . . tie the idea in with our local safety programs . . . get all the publicity we can for the idea in plant magazines, trade magazines and local newspapers . . . on bulletin boards, billboards, company stationery, safety committee buttons and even flipping coins.

It's going to take time, effort, ingenuity and cold cash to do the job. But we should all make it our business to see to it that Pulp and Paper becomes "The Safest Industry in Business."

F. O. SOUGHTON, General Chairman, Pulp and Paper Section, National Safety Council. (Also Services and Safety Supervisor, LongLac Pulp and Paper Co., Ltd.)

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PULP & PAPER # Monthly Report

. . . of significant news and views

LESS WATER FOR FUTURE PAPERMAKING. . . . Mills in Mexico and in Southern U.S. are operating with only one-half or one-third the water that was believed necessary by some officials in companies which have built mills. Watch for more progress in the future in making pulp and paper with less water.

SIGNS OF MORE PAPER NEEDS. . . . Frozen food sales will triple in the next ten years . . . to over 7 billion dollars, says Nathan Cummings, chairman of Consolidated Foods Corp. Production has doubled in the past five years. Another signal: Chicago area will need 400 additional supermarkets by 1965 to keep up with population growth, says Jewel Tea Chairman Franklin J. Lunding.

NEW PROGRAM AT S. D. WARREN. . . . Improved uniformity of paper and increased paper machine production are behind new stock treatment program at S. D. Warren Co.'s Cumberland Mills, Me., mill. Company has been breaking up purchased pulp in hydrating beaters. A new pulper will be added. Now baled pulp will be dewatered, pumped to storage tanks and delivered to machine in slush form.

PREDICTS DEMAND WILL PUSH AHEAD. . . . Thomas B. McCabe, president of Scott Paper Co., is confident that the present situation in which paper production generally has overtaken demand is temporary. "I believe there is ahead of us an era of growth which will be greater than any we have yet witnessed," he said, adding that Scott's sales goal of $500,000,000 in 1961, set last year, "may prove to be conservative."

EAST TEXAS DELAYS EXPANSION. . . . East Texas Pulp & Paper Co., Evadale, Tex., makers of market pulp and board, eventually plans a 400-ton expansion. It is proceeding with engineering and other work, but is not definitely committed to a construction or startup date. "It is only a question of timing," President R. M. Buckley told PULP & PAPER. He indicated that the company anticipates demand for the added capacity will be reached in a year or two, possibly a little longer.

FAVORED PULP MILL SITES? . . . While published reports have said the Montana state planning board picks the Flathead area in northwest Montana as probable site for a third mill in that state, leaders in forest development and industries in the state definitely do not agree. They tell PULP & PAPER that a number of locations in other parts of Montana—some east of the Rockies—and in northern Idaho are likely to be given more favorable consideration, because of pollution problems and a strong sportsmen's organization in the Flathead area. Waldorf is now building a mill near Missoula and St. Regis projects one for the future near Libby.

WILL BUILD PAPER MILL NEXT YEAR. . . . Hammermill Paper Co. has postponed plans for a new paper mill on the Allegheny River near Franklin, Pa. Opposition from state conservation organizations is chief cause of the delay, but the company still plans to build in spring of 1958, it is reported.

Please turn page for more

Bolton's BLUE DEVIL Knives save over $185.00 per day in chip production

. . . . . CUT SAWDUST IN HALF

In a large northern pulp mill* records comparing the performance of BOLTON'S NEW BLUE DEVIL HIGH SPEED KNIVES with those previously used show a net saving of over $185.00 a day.

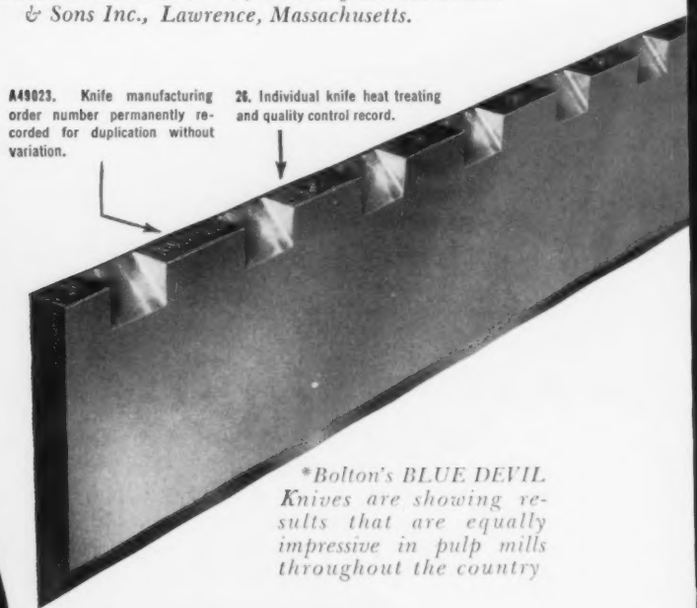
The amount of sawdust was *cut in half* — reduced from 4% to 2%. After 27 grinds BOLTON'S BLUE DEVIL HIGH SPEED KNIVES diminished in width a mere 3/8" — a hard-to-believe figure of .0138 inches per grind — with 1 1/8" of knife life remaining.

CUSTOM CRAFTING MAKES IT POSSIBLE

Money-in-pocket results like these are attained with BLUE DEVIL KNIVES because they are custom crafted to improve individual chipping operations. Manufacturing specifications are prepared *only* after a complete survey of the chipping conditions is made right in your wood room. Provided with these facts Bolton engineers and metallurgists determine metal selection, specific heat treating techniques and other custom processing steps — carefully calculated to fulfill specific chipping requirements and objectives.

A new concept in chipper knife manufacturing is introduced through BOLTON'S BLUE DEVIL HIGH SPEED KNIVES. Users are discovering new efficiency and dollar savings on a wide variety of pulp wood under varying wood room conditions. Custom crafted BLUE DEVIL KNIVES can accomplish the same for you.

How recently has your chipping operation been reviewed? For more information on Bolton's BLUE DEVIL KNIVES, contact *John W. Bolton & Sons Inc., Lawrence, Massachusetts.*


A49023. Knife manufacturing order number permanently recorded for duplication without variation.
26. Individual knife heat treating and quality control record.

**Bolton's BLUE DEVIL Knives are showing results that are equally impressive in pulp mills throughout the country*

BOLTON EMERSON

ADE MARK

continued

41 MILLS WILL BE USING CHLORINE DIOXIDE BLEACH. . . . Dr. W. H. Rapson, University of Toronto, and pioneer in introduction of chlorine dioxide bleaching in North America (in Canadian International mills and International's Southern mill at Natchez) reports that 41 mills on the continent now are or will be using this process—once considered too dangerous to even consider seriously.

NEW SOUTHERN MILL BY MID-1958. . . . The new $55,000,000 Naheola, Ala., pulp and paper mills of Marathon Southern Corp. will begin operations about May, 1958. A large printing plant will operate in conjunction with finishing and converting operations. Some 50 homes will be built in Butler and Linden for key personnel. J. E. Sirrine Co., Greenville, S.C., are engineers.

FTC SCOTT HEARING ADJOURNED. . . . Acting on a suggestion that hearing be adjourned until the government had prepared its case better, the FTC hearing in Green Bay, Wis., on charges that Scott Paper Co. violated the Clayton anti-trust act in acquiring three paper companies since 1951, was adjourned indefintely. Gerhard Gesell, Scott's chief counsel, had repeatedly contended that testimony had nothing to do with the complaint. A hearing scheduled later in Minneapolis was cancelled outright.

FIBRE BOX SHIPMENTS SET NEW RECORDS. . . . P. L. Brockington, asst. statistician, Fibre Box Assn., reports that final figures for 1956 show shipments of 97.6 billion sq. ft., up 2.7% over previous high of 95.0 billion sq. ft. in 1955. "Efficient management and good merchandising should bring a prosperous year to this industry in 1957," he said.

EARNINGS THIS YEAR HIGHER THAN LAST. . . . Total sales of Brown Co. "are higher for the first four months of this year than in the comparable period of 1956," reports Pres. A. E. H. Fair. The firm has purchased land in Vina Vista, Calif., and is studying other locations in the Southeast as sites for other pipe-making plants to produce "Bermico" products.

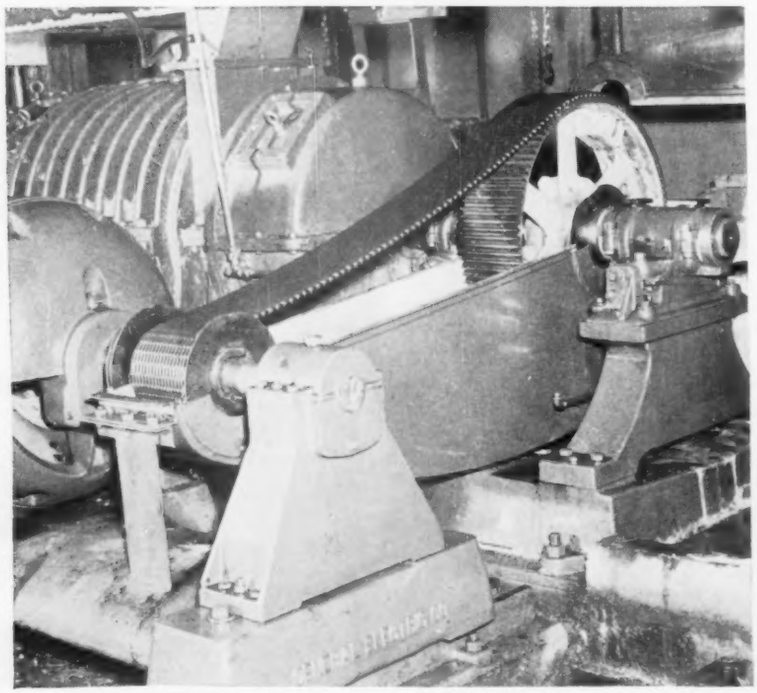
PREDICT ELEVEN MILLION TONS NEWSPRINT DEMAND BY 1965. . . . A report sponsored by ANPA forecasts domestic newsprint need of 8,000,000 tons for newspapers, 600,000 tons for other uses, and Canadian and overseas demand of 2,575,000 tons, for a total demand upon North American industry of 11,175,000 tons of newsprint by 1965. This is about 3,000,000 tons more than 1956 production.

EXPECT TOLEDO MILL START-UP IN JAN. '58. . . . H. S. Daniels, president of Georgia-Pacific Paper Co., reports foundations are in and walls are springing up for the firm's new 250-ton kraft pulp and paper mill at Toledo, Ore. Casper ("Cap") Youngchild, veteran industry consultant, is on the job to see that plans, engineering and, later, operating all go smoothly. Two Portland firms have contracts —Hoffman Construction Co. for mechanical erection and installing piping at the plant and Hanning & Gonzales for water and effluent line installations.

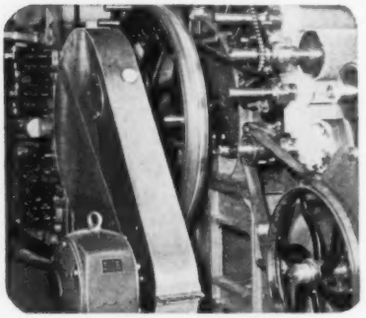
FIRST NSSC RECOVERY PLANT to use new Mead process has just started up at The Watervliet Paper Co., Watervliet, Mich., said to mark a milestone in NSSC recovery. Consulting and designing engineers were John G. Hoad & Associates, Inc. Second installation of Mead process will be at its Heald Division in Lynchburg, Va. Builder of both plants is Babcock & Wilcox Co.

Please turn page for more

Here's the record of LINK-BELT silent chain

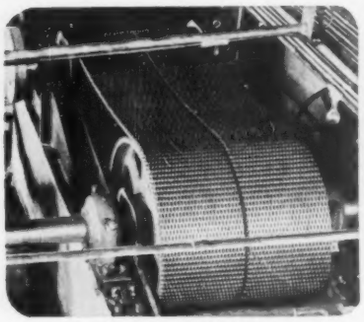


How do your drives compare?

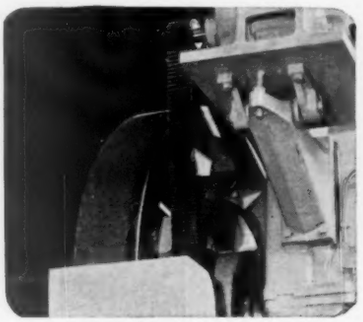


. . . IN SEVERE SERVICE. Link-Belt silent chain transmits power from a 100 hp motor to drive shaft of paper refiner. Link-Belt silent chain drives are often lower in first cost, always lower in ultimate cost—due to minimum maintenance requirements, long life and positive action which eliminates power losses due to slippage.

. . . UNDER ADVERSE OPERATING CONDITIONS. Humidity, heat, cold do not lower this chain's better than 98% efficiency.



. . . AT LARGE OR SMALL HP. A versatile line, these drives are available from fractional to thousands of hp.



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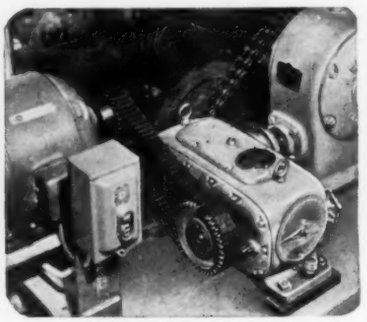

. . . IN LIMITED SPACE. Easy to assemble in close quarters, silent chain permits built-in drives, compact housings.

. . . AT HIGH SPEEDS. After 13 years on this newspaper press at speeds up to 4700 fpm, silent chain is still efficient.

For more details and advantages . . . for complete selection and technical data — ask your Link-Belt office or authorized stock-carrying distributor for a copy of 88-page Book 2425.

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continued

NEW COMPANY BIDS FOR ARIZONA PULPWOOD. . . . Navajo Pulp & Paper Co., a newly formed organization located at Winslow, Ariz., submitted the lone bid on a USFS 200,000-cord pulpwood sale on Sitgreaves National Forest held Apr. 29, according to Regional Forester Fred H. Kennedy. Principals of the purchasing firm are George Brown, W. W. Armstrong and B. H. Mead. Plans call for constructing a groundwood pulp mill at Winslow to use at least 20,000 cords annually. Water will be obtained from the city.

PICKS STAINLESS CLAD DIGESTER. . . . Columbia Cellulose Co., manufacturing high alpha pulp at its Prince Rupert, B.C., mill, is installing a new stainless steel clad (Lukens 317 EL) digester—the seventh in line. It is a Dominion Bridge unit, 60 ft. high, 19 ft. dia. Selection was made when staff, touring Europe, found over 30 stainless steel clad digesters have been installed in Sweden, Finland, Norway, Germany and Switzerland.

NEW THILMANY MACHINE NEARLY COMPLETE. . . . S. J. Baisch, chief design engineer for Thilmany Pulp & Paper Co., said the last item for the new paper machine, a 15-ft. diameter Yankee dryer, was scheduled to leave England on Easter Sunday. Tentative startup date for the Yankee Fourdrinier, No. 7 machine is the middle of July.

PLAN OUTLAY OF $10,500,000 in 1957-58. . . . John L. Riegel, chairman and president of Riegel Paper Corp., told the annual meeting that earnings for the remaining quarters of 1957 are expected to be better than first quarter earnings of 56 cents a share. He said that of the $10,500,000 needed for capital expenditures in 1957 and '58, less than half will require outside financing.

SEES SALES GAIN THIS YEAR. . . . Federal Paper Board Co. expects sales to approach $60 million in 1957, "with some improvement in earnings," John R. Kennedy, pres., told the New York Society of Security Analysts recently. Mr. Kennedy said earnings this year would be in line with the $4.77 a share for 1956, after deducting a non-recurring profit of 30 cents a share. Sales last year were $57,900,000.

1ST QUARTER SALES UP, NET INCOME DOWN for Scott Paper Co., Chester, Pa. Net sales were $69,842,521 compared with $66,829,080 in the same period last year. Increased costs brought net income down to $5,311,587, compared with $5,790,144 in 1956, first quarter.

SALES OUTLOOK IS HEALTHY, reported W. L. Keady, pres., at Fibreboard Paper Products Corp.'s annual meeting. A new corrugating plant at Antioch, Calif., new gypsum plants at Florence, Colo., and Newark, Calif., and major improvements to increase capacity at Port Angeles, Wash., pulp mill, and other Pacific coast plants, were carried out in 1956. In the first quarter of '57 research and development activity increased greatly, and the firm recently announced formation of new Creative Design Center.

EXPECT INCREASED EARNINGS FOR REMAINDER OF '57. . . . Pres. A. B. Layton, Crown Zellerbach Corp., San Francisco, Calif., says "it is entirely possible that we will make up the decreased first quarter earnings in subsequent quarters." In spite of first quarter records in sales and production, net income of $9.5 million was $2.8 million below same period last year. Kraft production has been cut from seven to six days a week, but Crown Z is still producing and selling more kraft this year than last because of additional output from new Antioch, Calif., mill.

Please turn page for more

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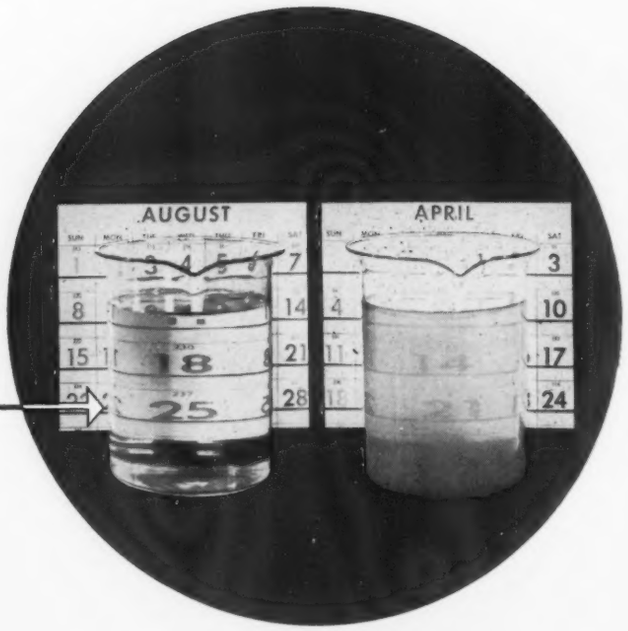

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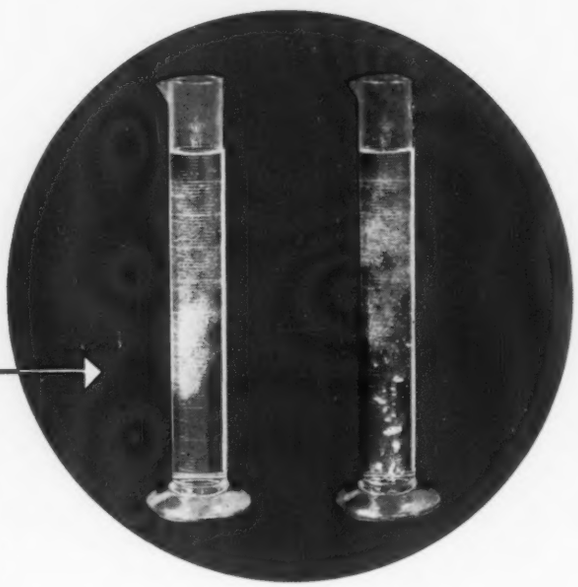
Disperses and Dissolves *So Quickly*



If you use soda ash in solution, you can probably speed up your processes by switching to Westvaco® Soda Ash.

While you watch, the free-flowing, needle-like crystals of Westvaco Soda Ash disperse and dissolve . . . form a clear, colorless solution . . . 94% as clear as distilled water by electrophotometer measurement. You never need break up lumps or clods, never need remove turbidity by filtration.

Add chemical purity, less dusting and better flowability to quick dispersion and dissolution and you have five good reasons for using Westvaco Soda Ash.

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PULP & PAPER # Monthly Report

. . . of significant news and views

PROJECTS UNDER WAY AT CHARMIN Paper Mills Inc., Green Bay, Wis., are progressing on schedule. Near completion is a four-story building to house a new No. 5 digester built by Manitowoc Shipbuilding Corp. It has a capacity of about 13 tons cooked pulp or twice that weight of wood chips. An 80-in. Kamyr press to provide additional lapping capacity for sulfite pulp is being assembled. Pile driving is about completed for the main section of a new woodroom, to be followed by pile driving for the hot ponds.

MANDO REPORTS ON FIRST QUARTER. . . . Minnesota and Ontario Paper sales for the first quarter 1957 totaled $20,302,305 compared to $19,826,084 in 1956. Net income was $1,441,504, against $2,042,143 in 1956. Demand for Mando newsprint became less urgent in the first quarter while the company's specialty market remained steady. Insulite sales were down.

HEADQUARTERS OPEN, PULP MILL IS NEXT. . . . Alaska Lumber & Pulp Co. recently opened official headquarters in a Seattle office building. The firm hopes to get financing to build a new pulp mill at Sitka, Alaska, this summer. AL&P's new slate of officers are Tadao Sasayama, president; Takuji Ohshima and Y. Arisawa, vice presidents; Y. Niki, v.p. and secy-treas. Harold Cavin, builder of Ketchikan Pulp, is chief engineer in charge of design and construction of the new mill. Stevenson & Rubens, consulting engineers of Seattle, will assist. Howard S. Wright & Co., Seattle, and Guy F. Atkinson Co., San Francisco, are general contractors. Pres. Sasayama says they "expect to break ground this summer." The magnesia base pulping and recovery system will be used.

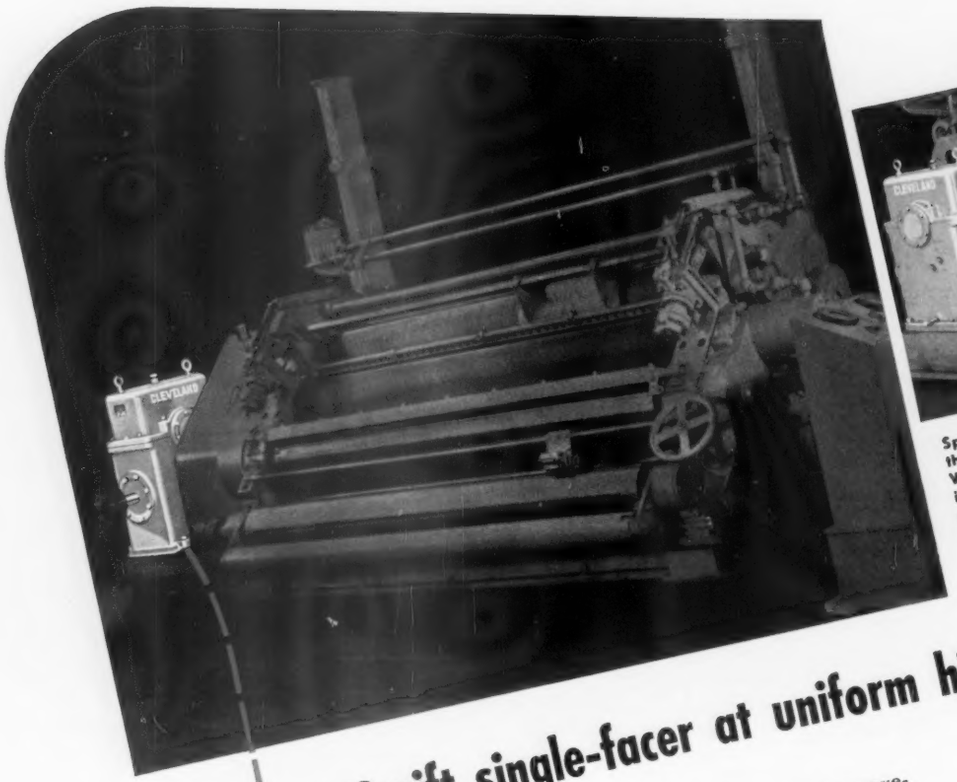
BRIGHT FUTURE FOR CYLINDER BOXBOARD. . . . William Caddoo, gen. mgr. of mfg. for boxboard and folding carton div., Robert Gair div., Continental Can Co., Inc., says new research indicates that future paperboard will have greater quality, uniformity and flexibility, to meet a wide variety of customer requirements.

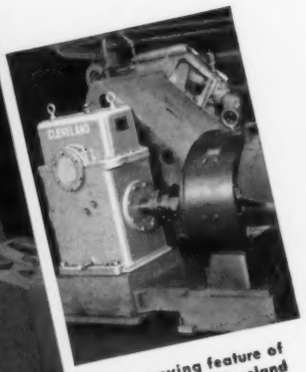
FROM LOG TO FINISHED PRODUCT IN ONE PLANT. . . . Diamond Match Co.'s new plant in Red Bluff, Calif., will be the world's most completely integrated woodworking plant, it is reported. Southwestern Engineering Corp., Los Angeles, and Dell Webb Co. are co-engineering the new mill. Products will include such items as woodpulp egg boxes.

EXPECT FULL PRODUCTION THROUGHOUT '57. . . . Coosa River Newsprint Co., Coosa Pines, Ala., is running at full capacity and expects to continue doing so, says Arthur G. Wakeman, president, in the annual report. A semi-chemical pulp mill to meet long fiber requirements of No. 3 newsprint machine is scheduled to go into production very soon and erection of equipment for the machine itself will start this summer, be completed in 1958.

NEW MILL PLANS. . . . While Powell River Co. expects to complete acquisition of Brooks-Scanlon Inc. at Bend, Ore., early this summer and special engineering and market studies are in progress to determine the location, size and type of pulp or paper mill to be built in the Deschutes Plateau region of Oregon, the company is marking time on its Kitimat, B.C., project. Indicated capital costs in the Kitimat area in relation to other regions are considered excessive at this time and the market situation now and in the near future is not "too inviting," says Chairman H. S. Foley. Powell River Co. is still considering possibility of establishing a unit in the Southern states, but "obstacles have arisen."

OPERATING PROFITS UP FOR DAILIES. . . . Editor & Publisher reports that a typical 50,000-circulation daily had 12% higher operating profits for 1956, for the highest net in three years, thus reversing a 10-year trend in declining profits. Cuts in overhead expenses counteracted increased operating costs.





Space-saving feature of the right-angle Cleveland Worm Gear drive is well illustrated here. Note how reducer and motor literally hug the driven machine

CLEVELAND drives Swift single-facer at uniform high speed

THIS famous single-facer has many exclusive improvements and advantages which mean much to the corrugated box-maker. Scientifically designed and ruggedly built, it turns out single-faced corrugated board at speeds up to 700 feet per minute.

Driving this machine is a heavy-duty Cleveland Worm Gear Speed Reducer. It connects the motor directly with the bottom corrugating roll. Hydraulic units provide pressure loading of the pressure roll and top corrugating roll. The result is high output of board of maximum strength and rigidity.

Clevelands are designed for the tough jobs—wherever the demand is for dependable performance under difficult conditions or continuous service for extra-long periods. So specify and use Clevelands on *your* machines. Get Bulletin 145 for engineering data and descriptions of all models. Write today—it's free. The Cleveland Worm & Gear Company, 3268 E. 80th Street, Cleveland 4, Ohio.

Affiliate: The Farval Corporation, Centralized Systems of Lubrication. In Canada: Peacock Brothers, Limited.

CLEVELAND
Worm Gear
Drives

PULP & PAPER NEWS FROM 'ROUND THE WORLD

Ask Me No Questions . . .

PULP & PAPER recently wrote to the Department of Commerce and Industry in Riga, Latvia, requesting information about the pulp and paper industry in that country, to be included in the forthcoming World Review Number. Instead of answering directly, the department forwarded our letter to the Export-Import Agency in Moscow, which in turn forwarded it to the Ministry of Paper and Woodworking Industry of the U.S.S.R. for reply. Hope it makes our deadline!

Now 34 Kamyr Digesters

Hudson Falls, N.Y. . . .There are now 34 installations of Kamyr continuous digesters in 10 countries, reports Knut Dahl, Inc., of Kamyr Inc., Hudson Falls, N.Y. They are designed for 1½ million tons production of pulp annually. There are eight in Japan, seven in Sweden, four each in U.S.A. and France, three in Finland, two each in Canada, Italy and Australia and one each in England and New Zealand.

Argentina to Get New Mill

Buenos Aires . . . The Olin Mathieson Chemical Corp., in partnership with Heinonen S.A., Argentine importer of paper and wood products, plans to build a $15,000,000 pulp and paper mill near Buenos Aires. Expenditures are expected to approximate $4,500,000 for U.S. machinery, $1,000,000 for German power plant and special machinery and $1,000,000 for miscellaneous equipment from Finland, Switzerland, Belgium, Sweden and Italy. The balance of about $7,812,500 would go for Argentine equipment and working capital. The proposed plant would be built on property belonging to Heinonen S.A. at Las Palmas near Zarate on the Rio Parana northwest of Buenos Aires.

Plan Mill in Brazil

Belem, Brazil . . . A group of Belem businessmen plan to incorporate a company, Industria de Papel do Para S.A. (IPPASA), to build and operate a pulp and paper mill in the Amazon Valley. Planned yearly capacity is 2,400 tons newsprint, 2,400 tons kraft paper, 2,000 tons writing paper and 450,000 paper bags for portland cement. It is expected that approx. 200,000 cu. ft. of local timber will be used each year to produce 15,100 tons of pulp required by the mill.

Influence of Iron on Pipe Aging

Helsinki, Finland . . . In a recent issue of the "Finnish Paper and Timber Journal," Ermo Kaila, Boris Nizovsky and Hannes Sihtola of Finnish Pulp and Paper Research Institute state that varying iron concentration of steeping lye has a great effect on the aging rate of kraft pulp. In order to test the aging rate of pulp and to prevent harmful variations in viscosities of laboratory viscoses, they say iron content should be kept constant. The aging rate increased after pulp was stored for one year, the effect being more marked for pulp containing more iron.

U.S. Machine for French Mill

Paris . . . Papeteries de la Chapelle has purchased a Beloit paper machine 268 in. wide with an annual newsprint production capacity of 85,000 tons at speeds up to 2,000 fpm. The machine is expected to go into production later this year and will bring the company's output to 190,000 tons a year.

First Yugoslav Kraft Mill

Belgrade . . . Yugoslavia's first kraft paper mill, at Maglaj in Bosnia, is now in production. Expected output this year is 22,000 tons, gradually to increase to 36,000 tons. Raw material will come from local forests and pyrites for the extraction of sulfur from Bosnian mines.

New Overseas Division

New York . . . Witco Chemical Co. has formed an international division, reports Robert I. Wishnick, chairman. L. D. Carver is manager of technical sales for the new division at the company's offices in New York.

Plastic Tubes for Waste

Stockholm . . . A new pulp mill in West Sweden will try to prevent pollution of the River Tidan by a novel method. The Swedish Match Co.'s Katrinefors mill will use 4 in. plastic tubes to carry waste from the mill to great depths a couple of miles out in Lake Vanern, where they are expected to remain lying. The tubes were made at a plastics factory on Lake Vanern and, closed with wooden plugs, were floated to Katrinefors where they were connected to the mill's outlet and rolled out through the river. The tubes were sunk by being filled with water and also were weighted down. The outlet section is pierced in many places to distribute waste over a large area.

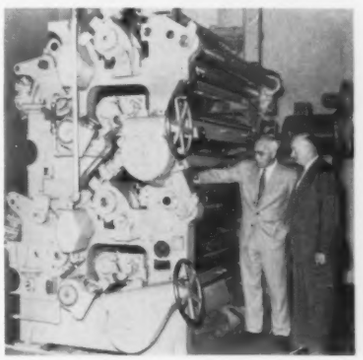
Make Milk Cartons in Norway

Pure-Pak, Inc., of Detroit, Mich., has given A/S Elopak Ltd. exclusive rights to manufacture and sell milk cartons in Western Europe, with the exception of Denmark and Belgium. The recently established A/S Elopak Ltd., owned by C. A. Johansen & Co. and Tiedemann Tobacco Factory, is building a plant at Spikkestad, some 20 miles west of Oslo.

Scheduled to begin operating about July 1, 1957, the plant will have a capacity of approximately 70,000 milk cartons per hour. Initially, production will be limited to five sizes, up to one liter. Later a second line of machinery to make two-liter cartons will be installed. The 9,000 sq. ft. plant may eventually be expanded.

In Philippines

Laucks Laboratories, Inc., Seattle, has appointed Aurelio Legman, Jr., of Manila, P.I., as sales and service representative in the Philippine Islands for its "Sentry" continuous moisture detector, and other products.



First in Europe

First Langston double deck corrugator to go to Europe has been installed by Reed Corrugated Cases Ltd., at its New Hythe, England, plant. Features are pointed out by Bryant W. Langston, president of Samuel M. Langston Co., Camden, N.J., to William C. Lane (right) Reed Corrugated Cases' director of production. A heavy duty 85-in. model with hydraulic loading of the pressure roll and corrugating roll, the corrugator was assembled adjacent to a single facer, which was then removed and the double deck corrugator moved into its place.

Now see with your own eyes

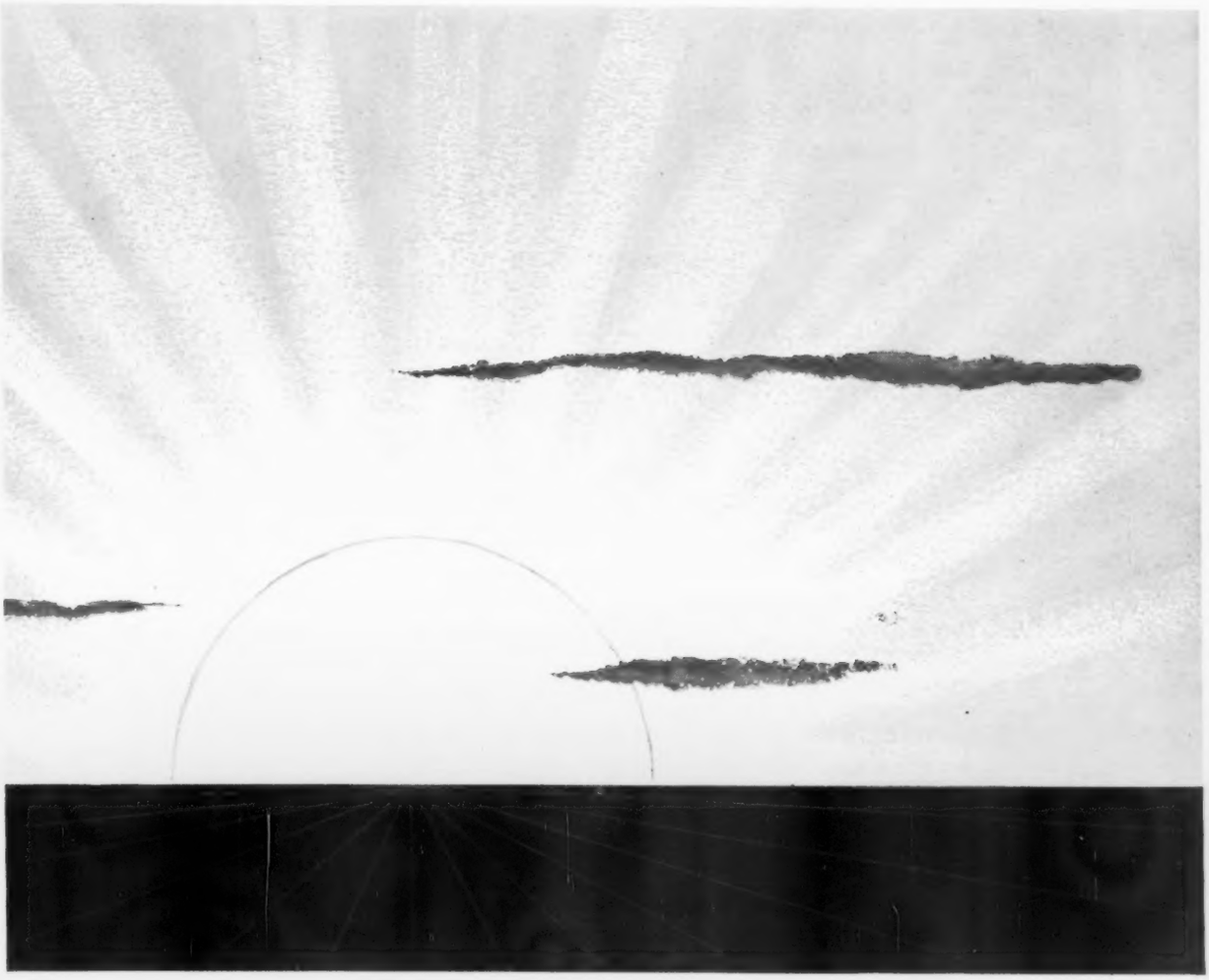
The Lightest Rosin

. . . and what they can

Claims are fine . . . but seeing for yourself is conclusive proof. Let your Cyanamid representative show you samples of the lightest rosin sizes available to paper makers. Estimate for yourself what these Cyanamid sizes can mean in terms of new whiteness and brightness in your paper.

There's no premium on this new size quality. You simply benefit from Cyanamid's recent product innovations. This means you can produce better papers with no increase in cost—or save on your whitening agents while maintaining present paper standards.

Actual samples of these tall oil rosin, gum rosin and pale wood rosin sizes—both straight and fortified—will show you immediately how much more value your sizing dollar can buy. Call in a Cyanamid Paper Chemicals representative and have him put the facts on *your* desk.



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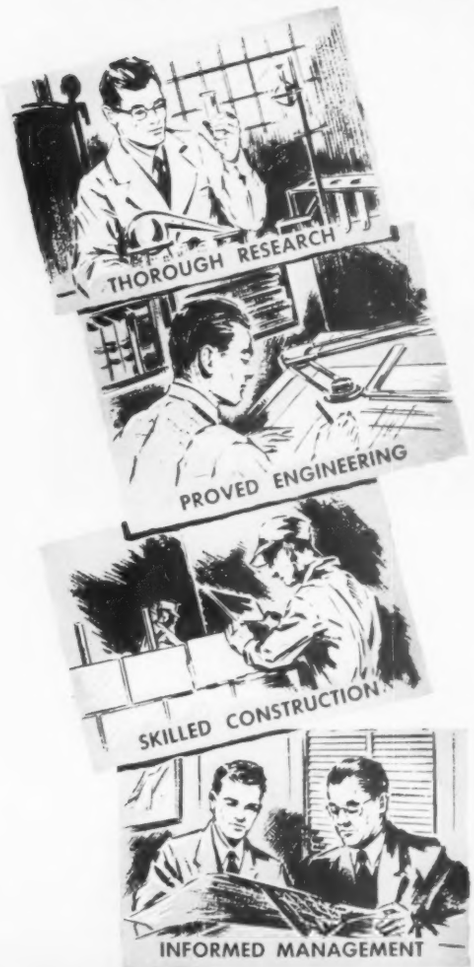

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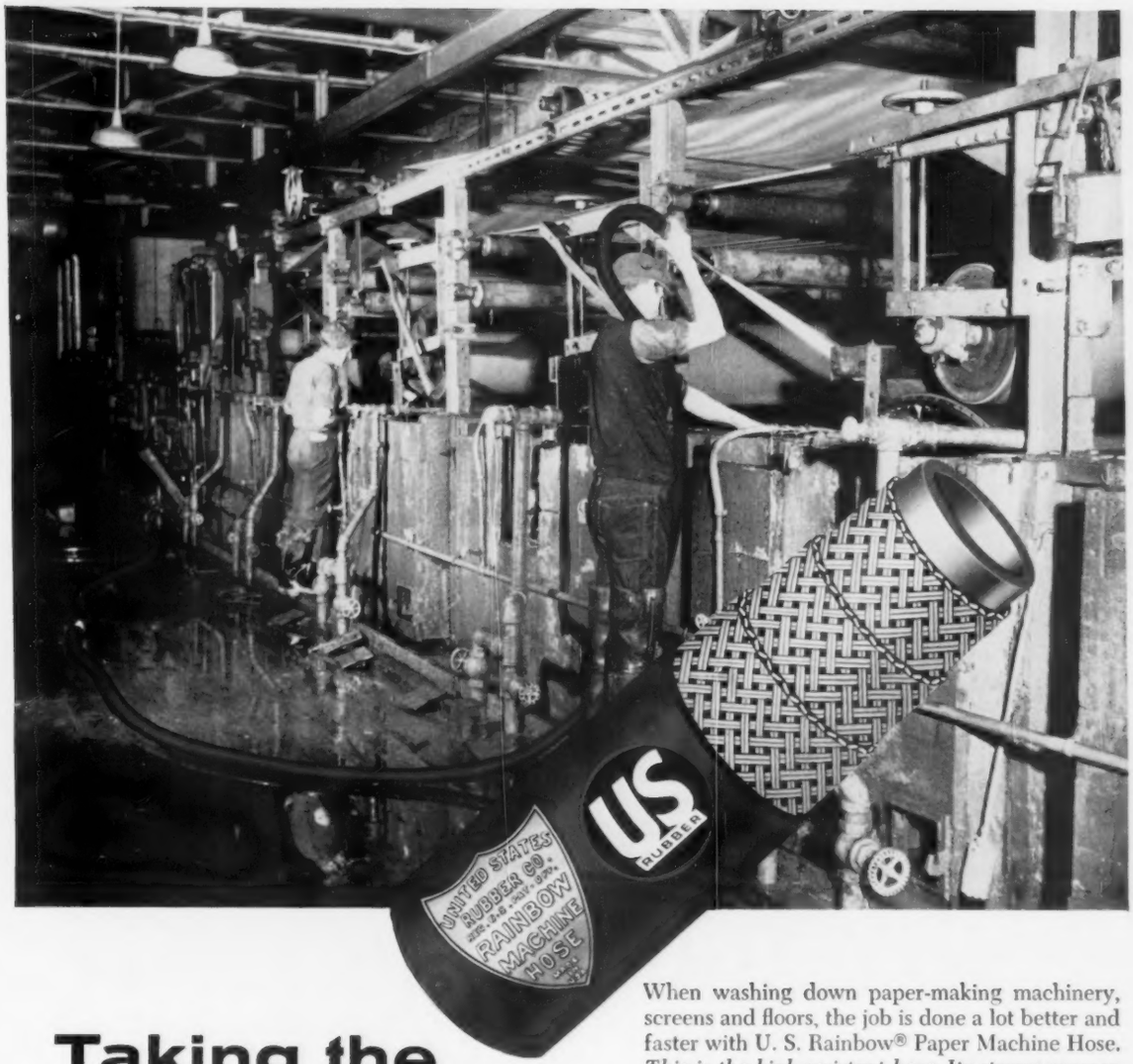

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This premium quality hose is available at any of the 28 "U. S." District Sales Offices, at selected distributors, or write U. S. Rubber, Mechanical Goods Div., Rockefeller Center, New York 20, N. Y.

US RUBBER Mechanical Goods Division

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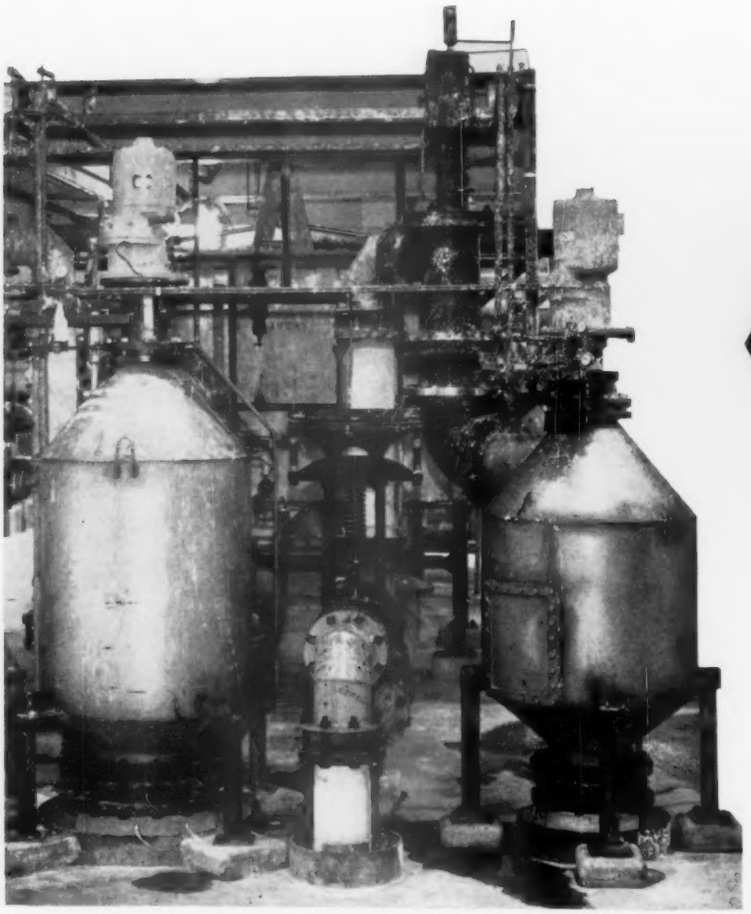

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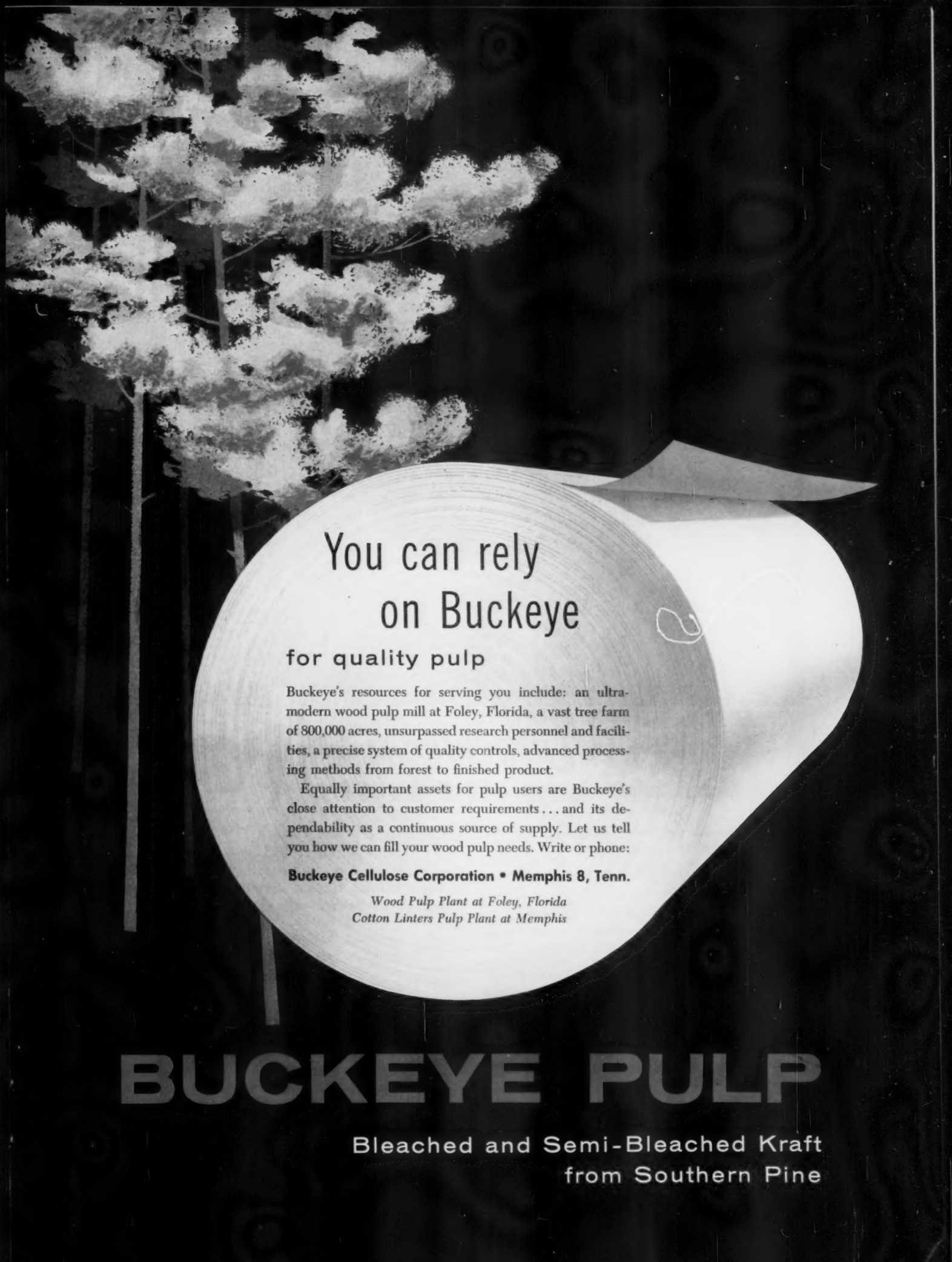
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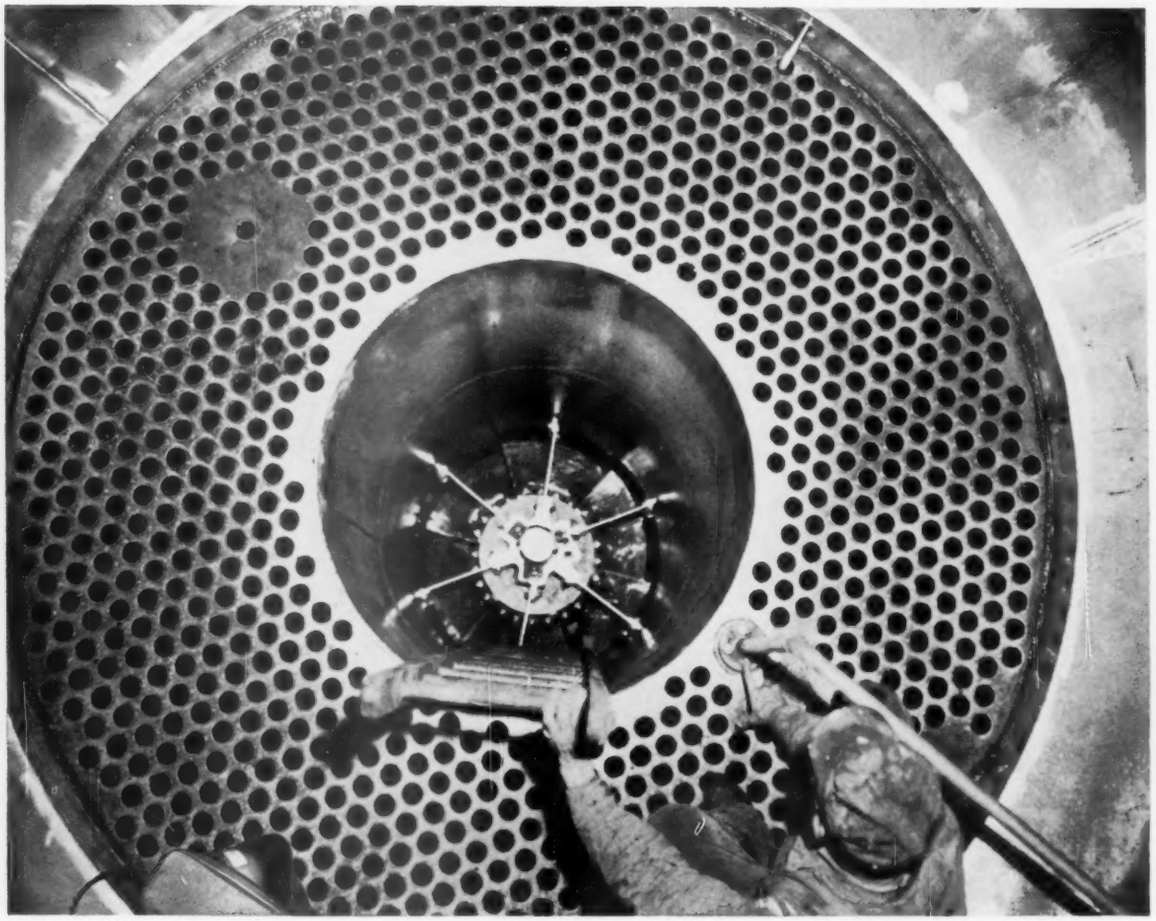

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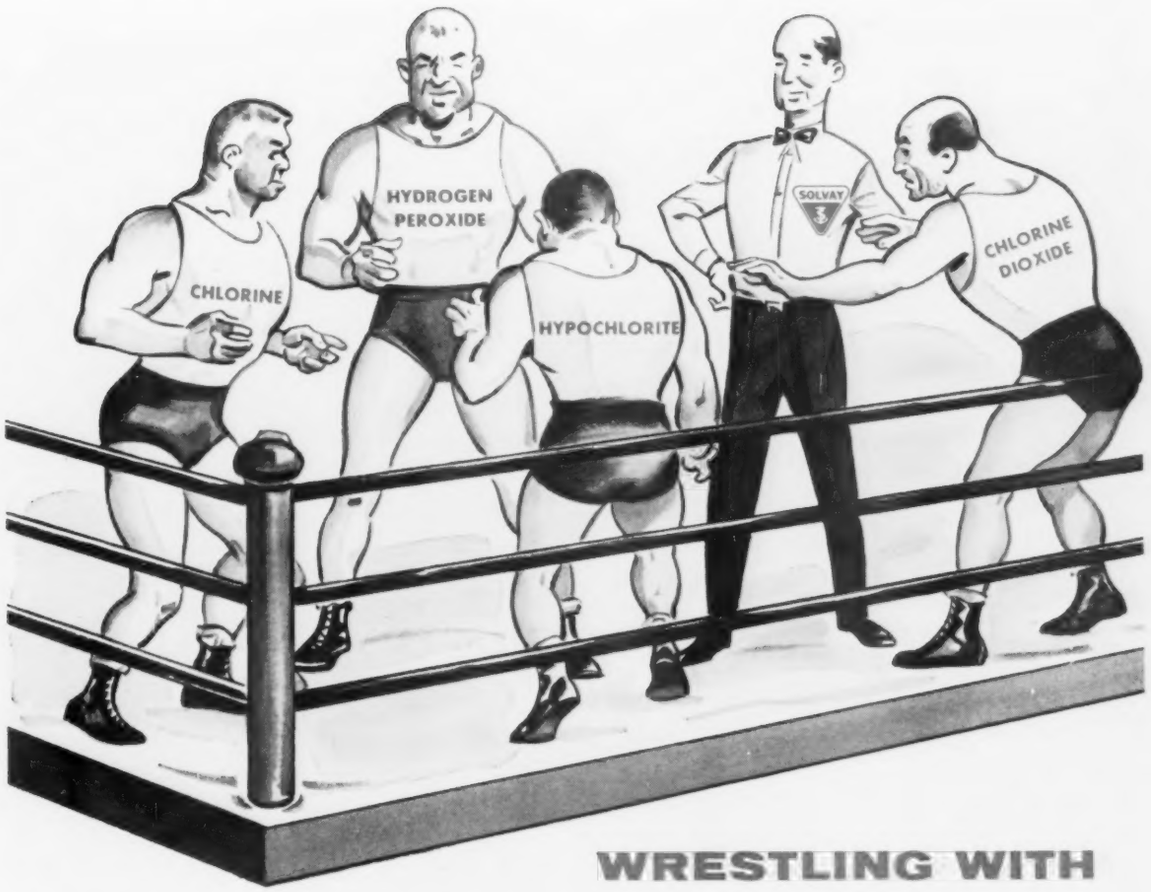

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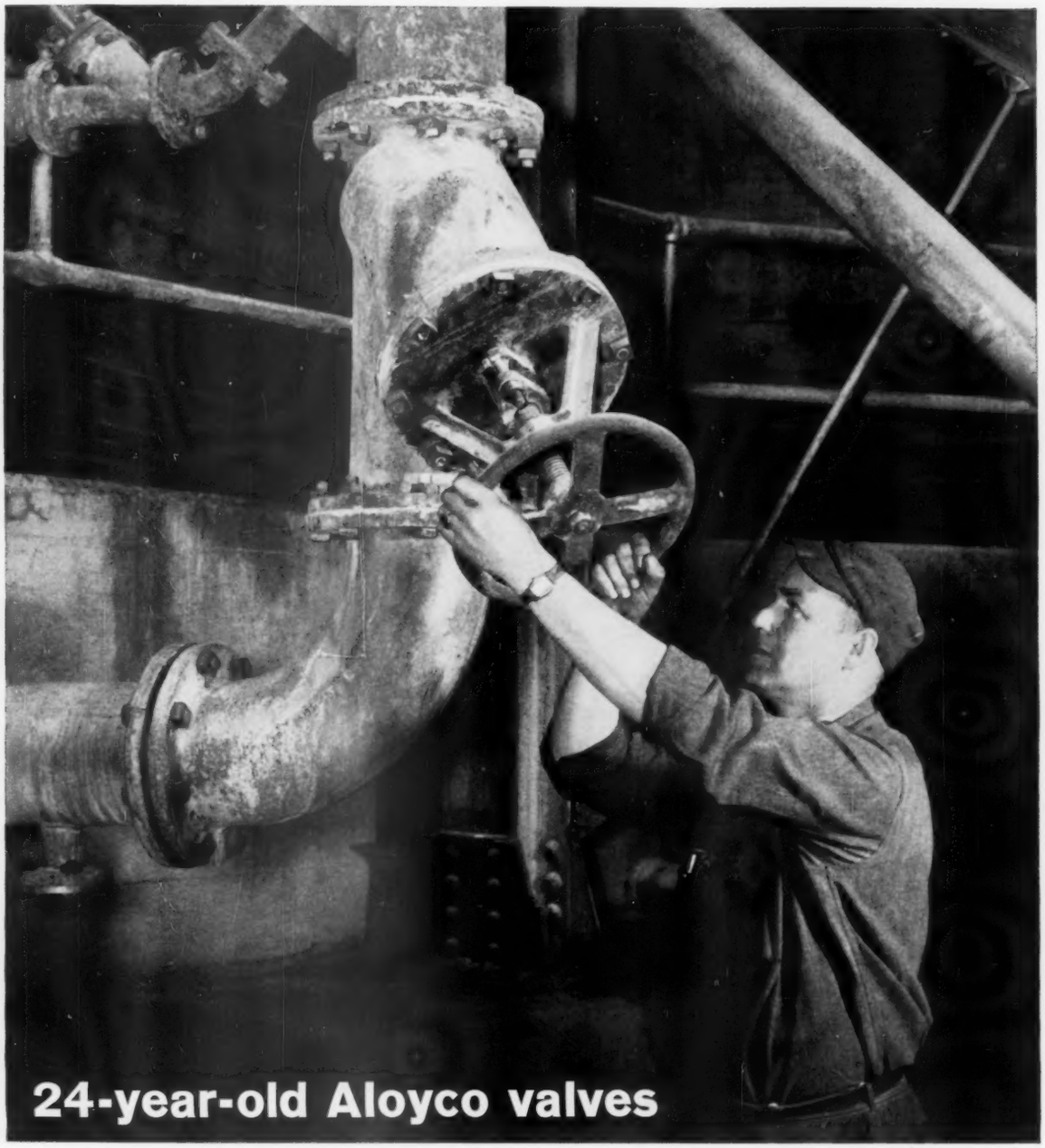

still handling hot acids in Maine pulp mill

This Aloyco Stainless Steel "Y" Valve is one of many in use at the Eastern Corporation mill at South Brewer, Maine.

According to Chief Engineer, F. H. Stetson, "The valves were purchased and installed in 1933 in conjunction with our hot acid system... have been in continuous use since that time."

With this kind of money-saving service, you can see why more and more pulp mills are turning to Aloyco Stainless Steel Valves. To produce a broad line of trouble-free valves in stainless steel calls for long experience in design, engineering and foundry techniques. It also calls for the most modern equipment. Leadership in these vital areas has made Aloyco the world's largest specialist in the manufacture of Stainless Steel Valves. Call us in on your next valve job. Alloy Steel Products, 1316 West Elizabeth Ave., Linden, N. J. 7.10

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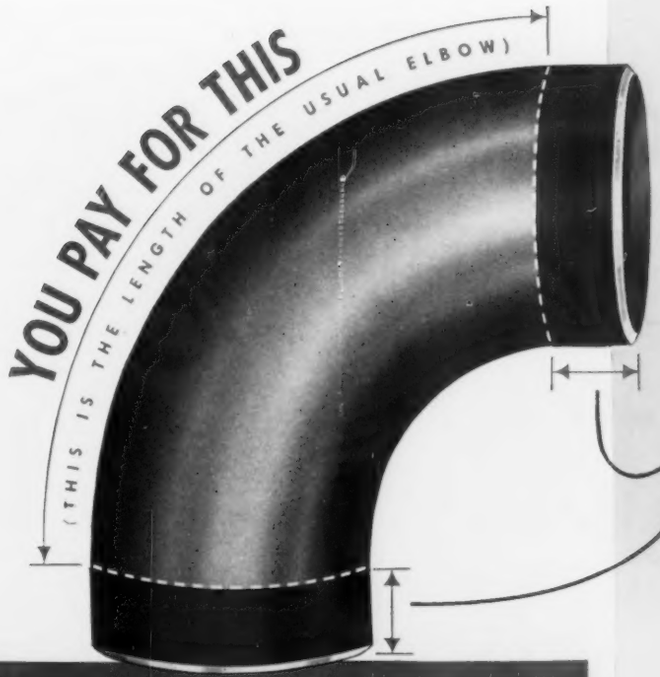

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For additional information, ask your Midwest distributor or write us for Catalog 54.

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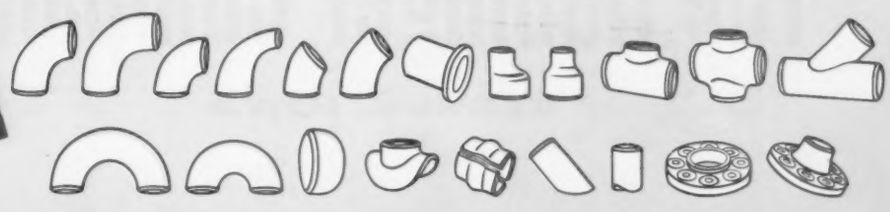

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the complete paper mill line

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There's an OK Brand product especially formulated for every paper mill operation requiring starches and adhesives ...and there's no extra cost for these top-quality OK BRAND products.

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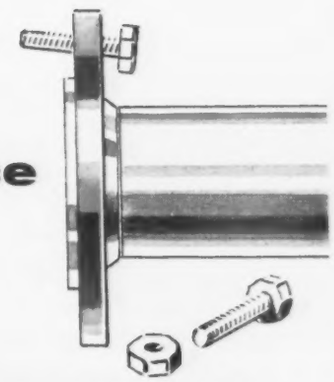

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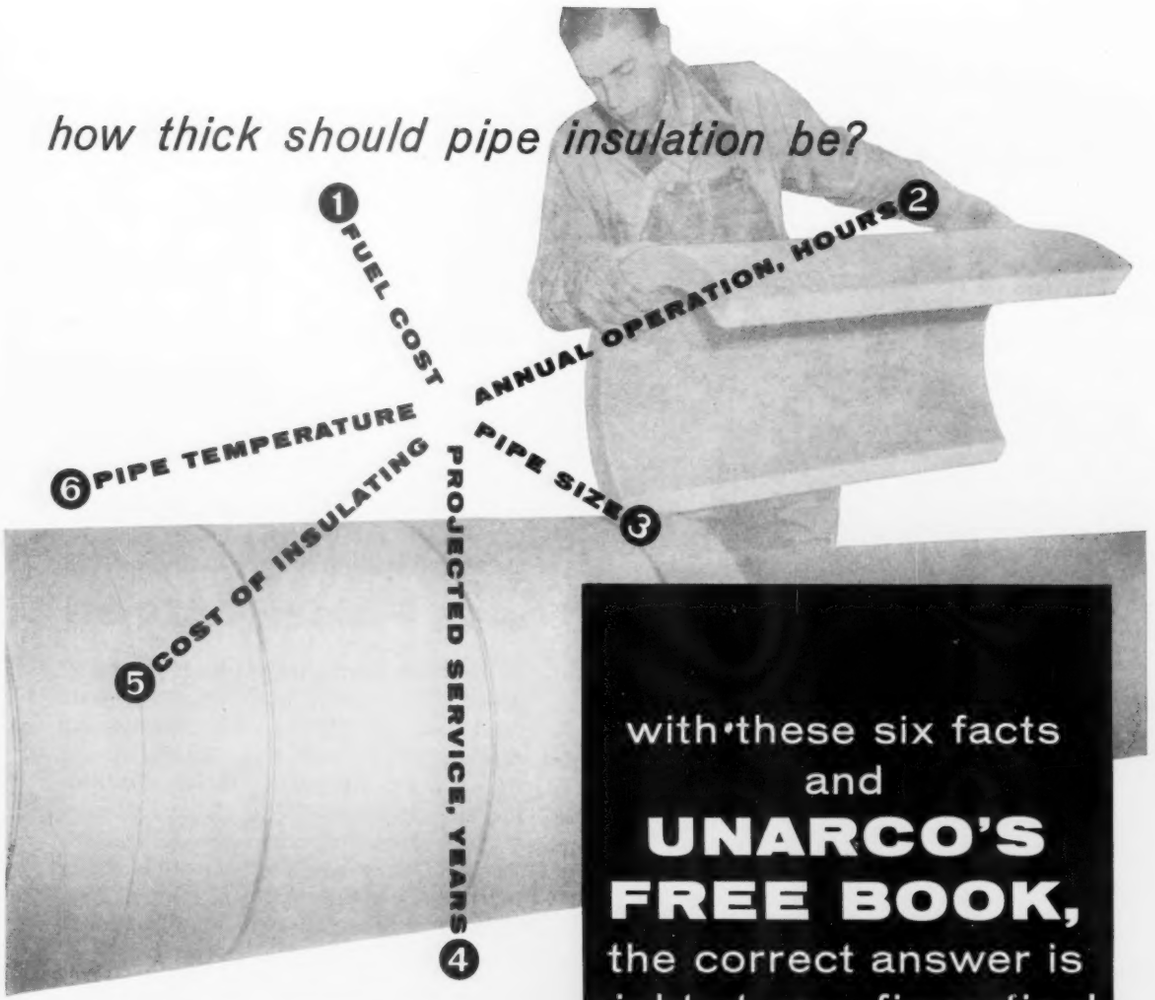

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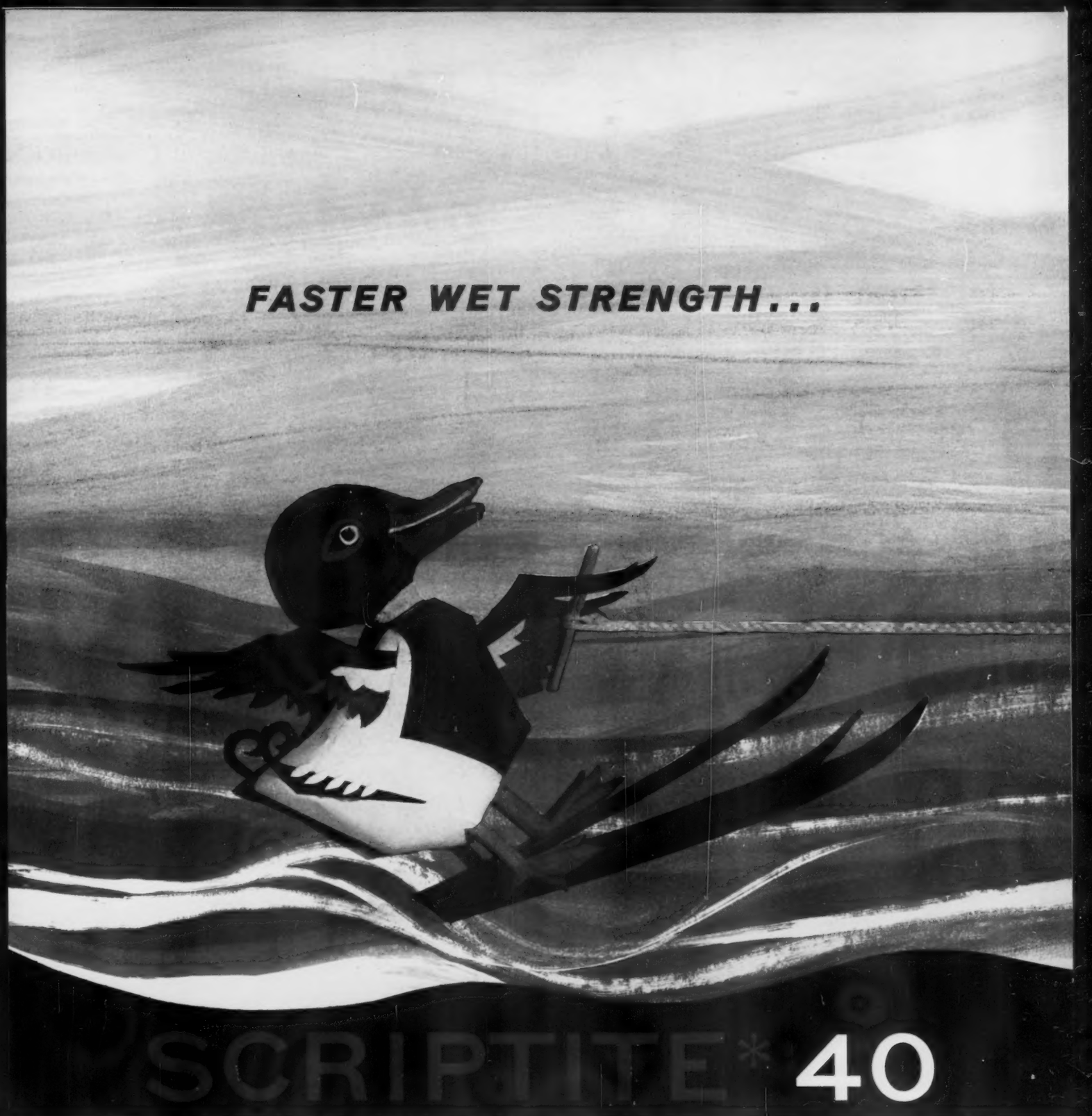

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Evaluate Scriptite 40 in your operations. For samples, technical data and complete technical assistance, write to Monsanto Chemical Company, Plastics Division, Paper Resins Dept., Room 000, Springfield 2, Mass.

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*SCRIPTITE: REG. U. S. PAT. OFF.

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SCRIPTITE 54 ... *for outstanding water resistance and both wet and dry rub resistance.*

SCRIPTITE 52 ... *in combination with formaldehyde to give water resistance to folding boxboard and to jute liner.*

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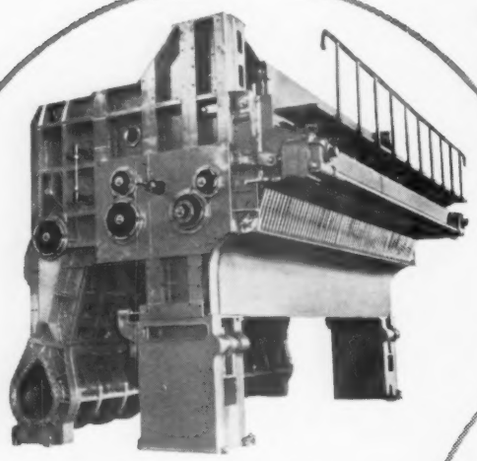
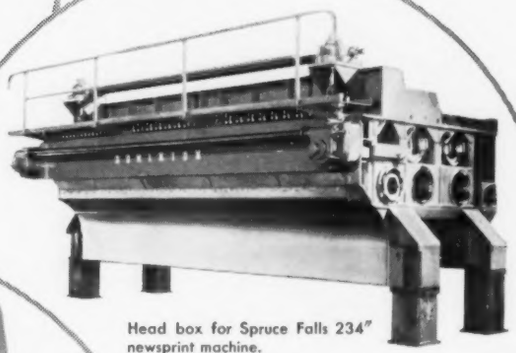
"DOMINION"

contributes to progressive improvements in Canadian paper making machinery



Dominion patented head box for Elk Falls 284" newsprint machine.



Head box for Spruce Falls 234" newsprint machine.

A head box for Howard Smith Paper Mills Crabtree Mill 96" Yankee Tissue Machine.

Three of the many new pressure type head boxes built and being built by Dominion Engineering— ensure controlled, uniform flow for paper machines regardless of stock, width or speed...

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Paper-Grade Pulps
Created by Papermakers for Papermakers

Throughout the free world, papermakers use and like Riegel's Albacel and Astracel... paper-grade pulps that provide the right balance of all important qualities... brightness, cleanliness, strength, formability and proper beating characteristics.

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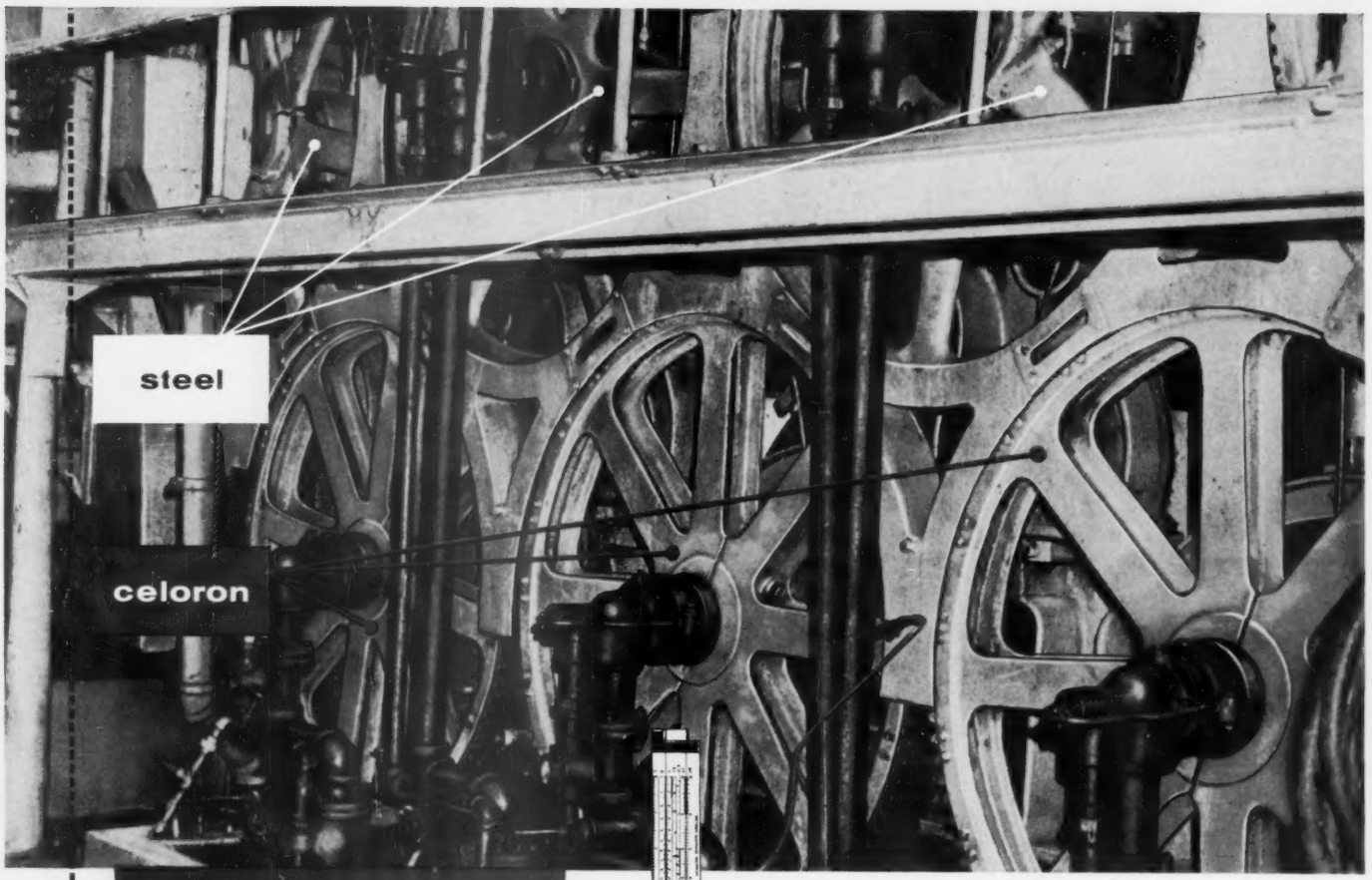

increase linear speed through WESTERN GEAR dryer gears!

Celoron*-filled dryer gears, used alternately with cast steel driver gears, have enabled paper manufacturers to substantially increase production of open-type paper machines. Typical Celoron* gear installations have increased linear paper speeds from 800-1150 FPM to 1200-1750 FPM. A recent installation increased speeds to 1750-2100 FPM.

Western Gear pioneered this concept a quarter of a century ago, and has since become the country's largest manufacturer of Celoron*-filled dryer gears. Design and manufacture has been constantly improved to meet increasing demands in paper speeds. Celoron*-filled gears are only one of many ways Western Gear has contributed to progress and greater profits for the paper industry. We would like the opportunity to help you, too.

For additional information write: Glenn Malme, Western Gear Corporation, P.O. Box 182, Lynwood, California

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ENGINEERING DATA

* Celoron, a trade-mark of the Continental-Diamond Fibre Company, is a heavy cotton base, laminated thermosetting phenolic gear stock, of exceptional strength, toughness and resilience. It has a Rockwell hardness of M105, a Brinell hardness of 38, a coefficient of expansion of .000014" per inch per degree F. Celoron has excellent resistance to heat, maintaining its strength and resilience at constant operating temperatures as high as 200 degrees F. without lubrication, 250 degrees in oil. It resists oil, grease, water and most corrosive chemicals.

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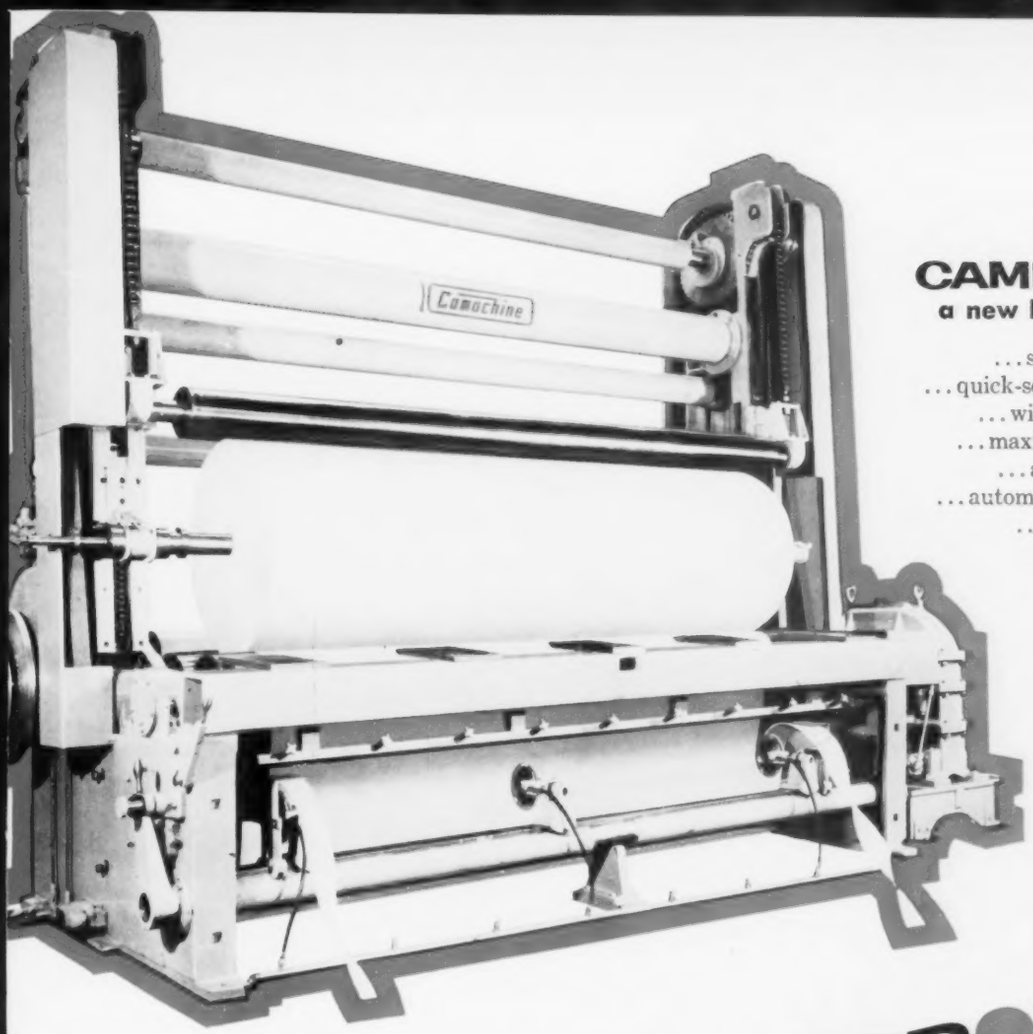
WESTERN GEAR *Corporation*
ENGINEERS AND MANUFACTURERS

PLANTS AT LYNWOOD, PASADENA, BELMONT, SAN FRANCISCO (CALIF.), SEATTLE AND HOUSTON — REPRESENTATIVES IN PRINCIPAL CITIES

CLIP AND SAVE



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...speeds up to 5000 fpm
...quick-set shear-cut or score-cut slitting
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CAMERON 430
a new slitter-rewinder

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...widths to suit requirements
...maximum rewind capacity 60"
...automatic riding roll lift *

* optional

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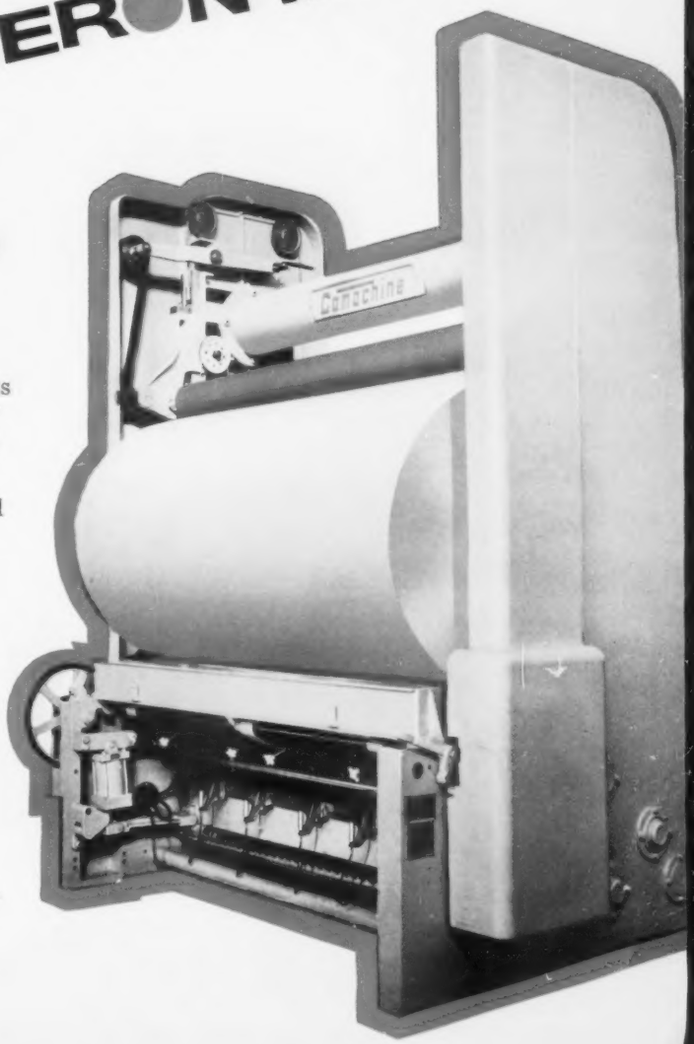

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460 and 430...two highlights in Cameron's sweeping new design program...setting new highs in production of quality rolls, new lows in operating cost...featuring dynamic new engineering developments by Cameron's

team of specialists

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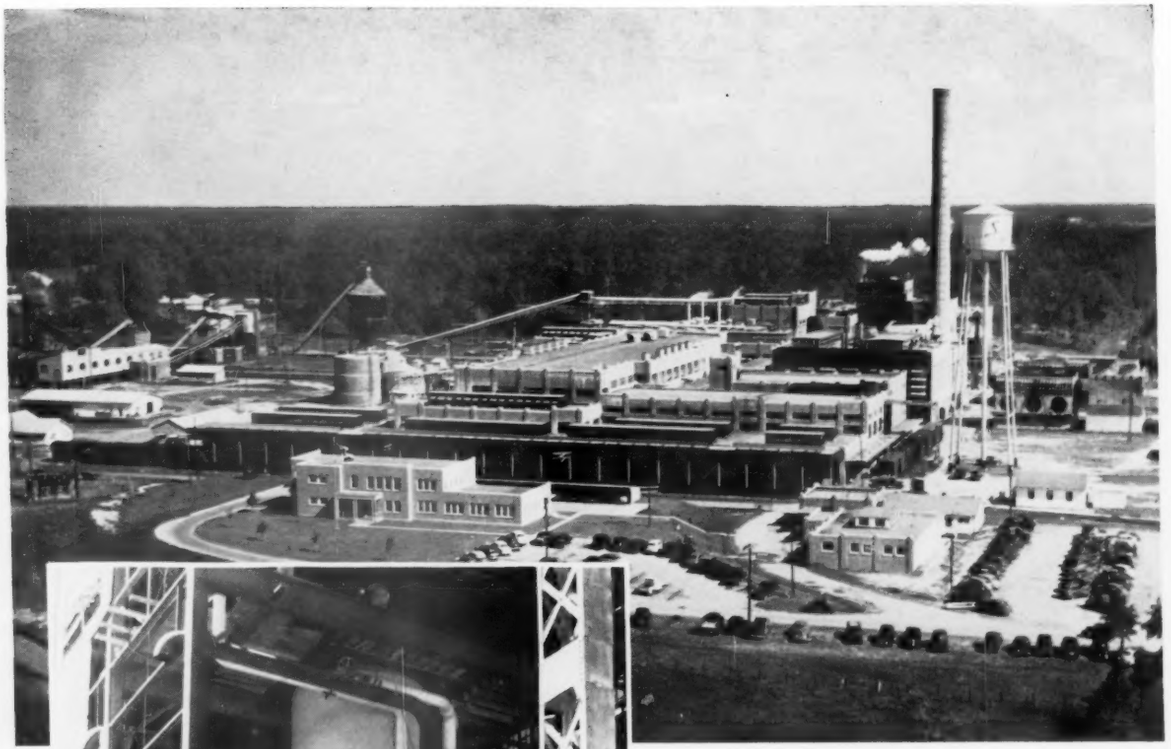

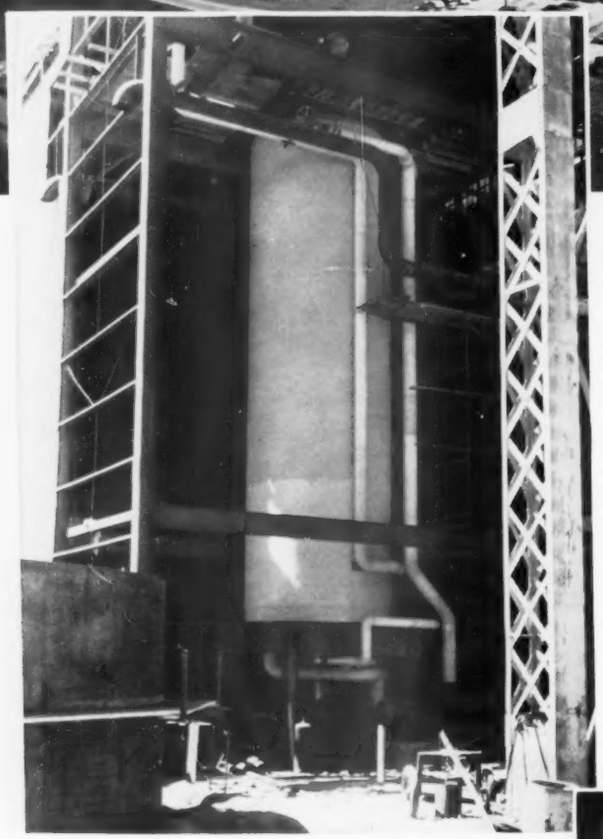

A Digester — Recent Installation at the Lufkin, Texas Plant.

From First Construction through Later Expansion Wyatt's Fabricated Steel Products Have Had a Role in the Growth of Southland Paper Mills, Inc.

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and
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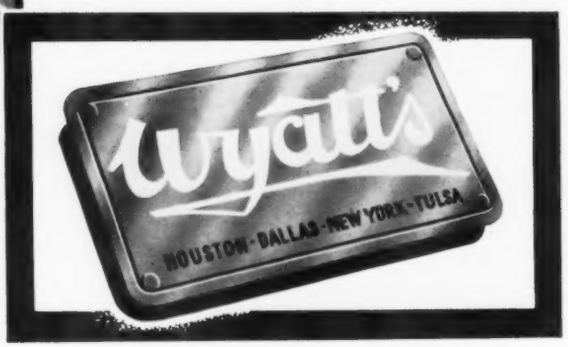
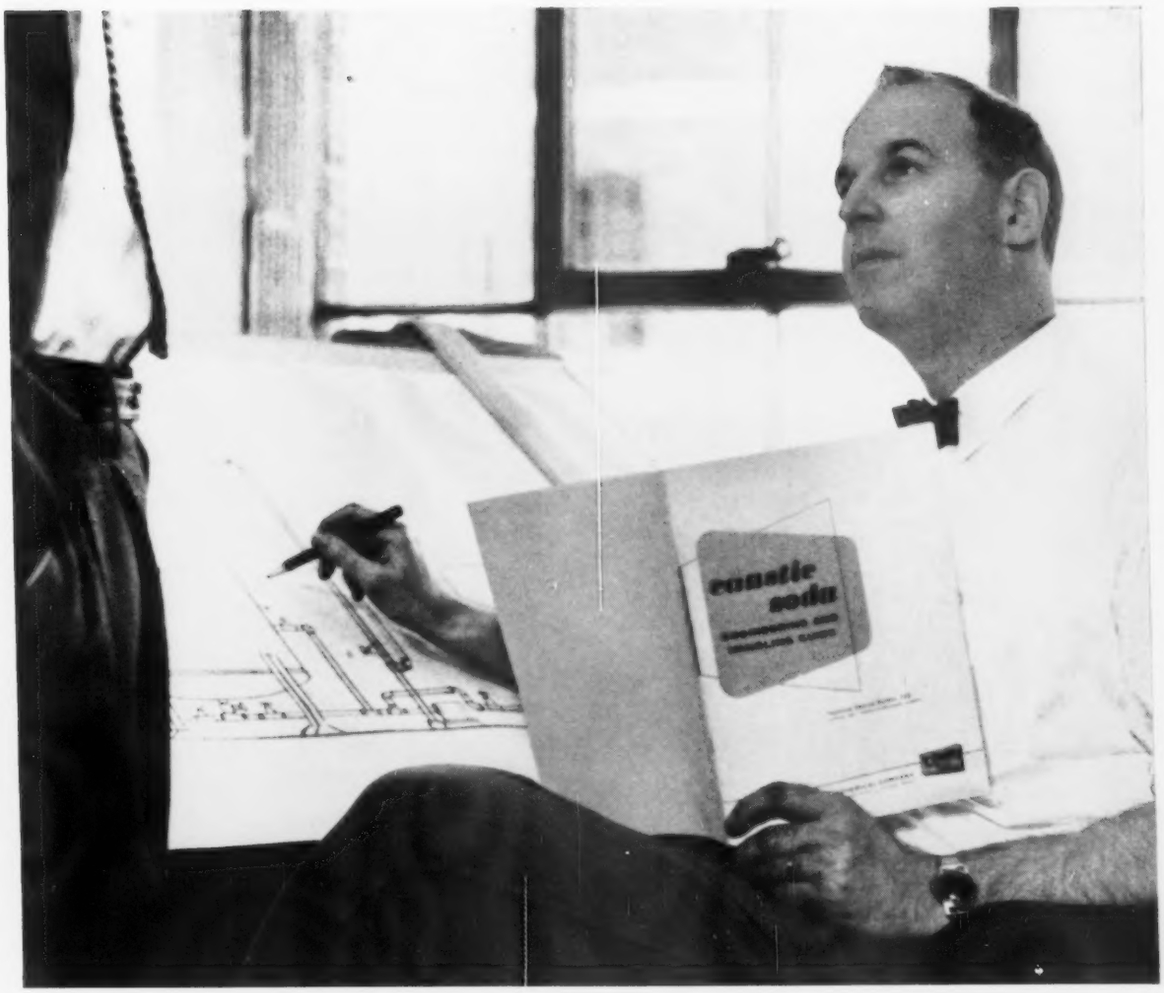
MOLDERS AND FABRICATORS OF PLASTIC AND RUBBER PRODUCTS





NEW HOOKER MANUAL helps you store and handle caustic soda safely

This new manual gives you 40 pages of information and advice on how to handle and store liquid caustic soda safely, efficiently, and with minimum risk of contamination.

Here are some of the contents:

- ✓ Large, detailed diagrams of equipment to use in unloading, diluting and storing.
- ✓ Commonly used methods for unloading a tank car of liquid caustic soda, for diluting to different strengths, and for storing.
- ✓ A section on safety precautions and first aid.
- ✓ A section on materials of construction.
- ✓ 18 charts, graphs and tables to help you predict and control the behavior of liquid caustic under a wide range of operating conditions. These cover such properties as dilution temperature, vapor pressure, viscosity, specific heat, etc.

For your copy of this new manual, write us today or use the coupon.

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Please send me a copy of Bulletin 102, *Caustic Soda Engineering and Handling Guide.*

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TITLE .....

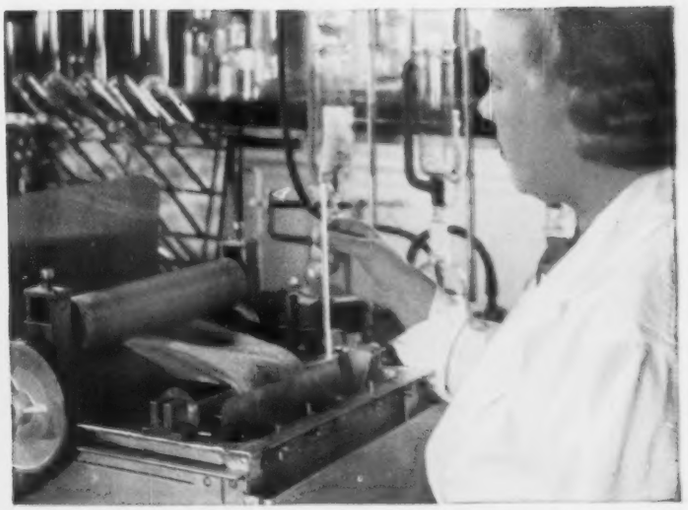
COMPANY .....

STREET .....

CITY ..... STATE .....

View of one section of the conditioning room at the main plant, Albany, N. Y., the many colors and shades indicating the wide variety of specialized chemical treatments daily being applied to Albany felts, each proven by performance as best for its particular application.

Specific-Purpose Chemical Treatments by Albany Felt Improve Felt Performance



Albany's extensive research program is constantly improving existing treatments and developing new ones to meet your demands.

Worker supervises and regulates application of one of many specific-purpose chemical treatments to felts in Albany's finishing department.

YES, Albany Felt's advanced chemical treatments *can improve your felt performance* — in roughly 60% of the positions clothed. This percentage represents the share of Albany's felt production currently receiving one *or more* chemical treatments. As the industry's pioneer in the field of chemical treatments, Albany has a wide range of varied treatments, since *no one formula* has been developed to answer *every* demand! These include the B and D series which improve starting and wetting; the W-6 Treatment to provide bacterial control; Z-5 for alkali resistance; and the F, H, J and U series which offer resistance to wear, hardening, filling and stretch in varying degrees dependent upon the desired application. In all, more than 20 of these treatments are at work today, *each solving a specific problem better!* Ask your Albany Sales Engineer for information on those best suited to your needs—his goal, as always, to help you produce *more saleable tons per day!*

ALBANY

FELT COMPANY

Main Office & Plant, Albany, N. Y. Other plants: Hoosick Falls, N. Y.
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"THE WORLD'S LARGEST MANUFACTURER OF PAPER MACHINE FELTS"

Latest Mill Results	SEPARAN 2610 lb. / ton	CLAY lb. / ton	TiO_2 lb. / ton	ASH %	OPACITY %	NET SAVINGS $ / ton WITH SEPARAN 2610
55 lb. ENVELOPE	NONE	530	0	7.3	88.0	
	0.5	310	0	10.3	90.2	4.50
60 lb. OFFSET BOND	NONE	550	30	12.2	92.0	
	0.5	400	30	13.7	92.0	2.00
25 lb. MACHINE COATED CARTON WRAP	NONE	50	150	12.2	77.0	
	0.75	50	125	13.2	76.0	5.50
50 lb. OFFSET BOND	NONE	370	145	9.6	89.0	
	0.6	145	100	12.6	90.5	12.00

Separan 2610 saves $2.00 to $12.00 per ton of paper

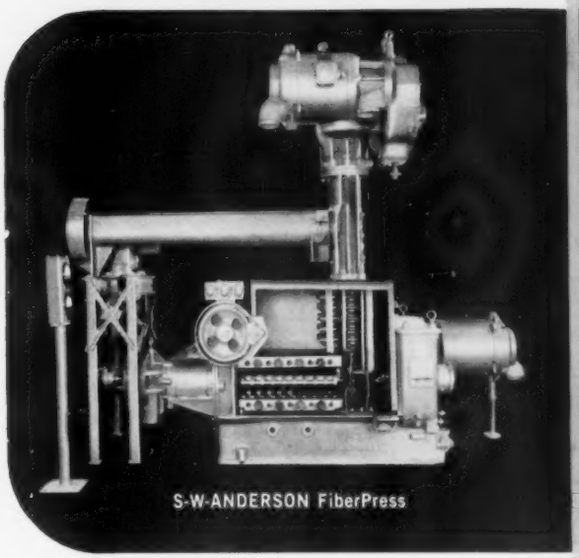
Tabulated above are mill results obtained on various papers with Separan 2610 as a filler retention aid. These savings tell only part of the story . . .

A synthetic flocculant of constant uniformity, Separan 2610® is proving the answer to many problems in pulp and paper manufacture. It is truly a revolutionary flocculant—easy to prepare and apply—requiring no preservative. It's effective over a wide pH and temperature range, is non-corrosive, and presents no hazard in normal use.

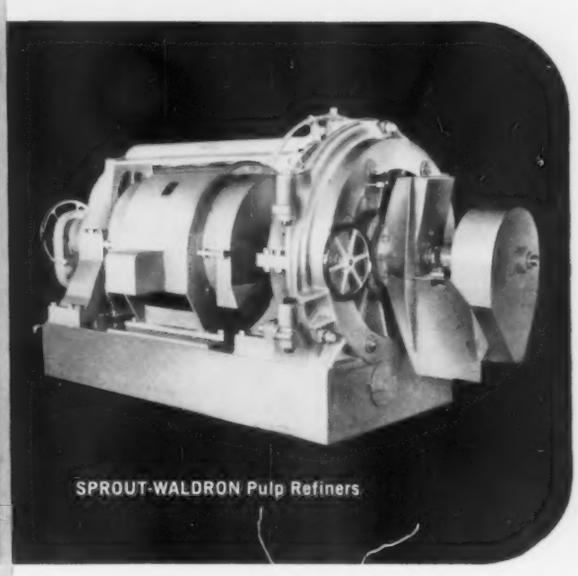
For your further evaluation of Separan 2610, a more complete and expanded report has been prepared titled "Separan 2610 in the Pulp and Paper Industry". In addition to filler retention, it reports on how this new Dow flocculant is saving money and improving other mill operations . . . in flotation type save-alls, white liquor or bleach liquor clarification, white water clarification and raw process water treatment. For your copy of this booklet, and/or a sample of Separan 2610, write THE DOW CHEMICAL COMPANY, TECHNICAL SERVICE AND DEVELOPMENT, Midland, Michigan, Dept. SC 1317D-1.

YOU CAN DEPEND ON DOW

TO REMOVE DISSOLVED SOLIDS
TO FIBERIZE SEMI-CHEMICAL CHIPS



S-W-ANDERSON FiberPress



SPROUT-WALDRON Pulp Refiners

New Combination PAYS 8 Ways

1. More complete removal of black liquor and dissolved solids from semi-chemically cooked chips in the two pressing stages of the FiberPress.
2. More complete fiberizing due to the special FiberPress method of transferring fiber from the vertical to the horizontal pressing stages in the FiberPress.
3. Reduces refining power requirements as much as 40% because of the pre-refining action of the FiberPress.
4. Provides strong, clean pulp for bleached or unbleached paper and paperboard.
5. At least 10% higher production capacity with the same horsepower input.
6. No charring of chips or fiber occurs when the press is shut down.
7. Simple control of pressing without danger of plugging by the patented choke-jaw design.
8. Increased wire and felt life due to black liquor removal.

The FiberPress can be installed ahead of your present refining equipment as well as with Sprout-Waldron Pulp Refiners. For full details, write to Sprout, Waldron & Co., Inc., 32 Logan St., Muncy, Penna.

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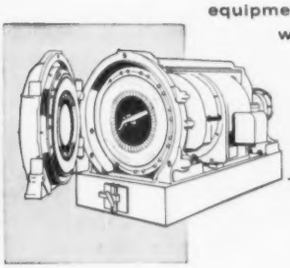

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MODERN PULP PRODUCTION EQUIPMENT

PP/512

BILT-COTE

an additive for coating colors

Alone or with organic film formers in tub or calender size dispersions

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better leveling and printing

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PULP & PAPER PRESENTS A "BLUE RIBBON" PANEL ON SAFETY

As a service to the industry, PULP & PAPER has once again informally organized a distinguished panel of leaders in the industry—this time to present their views on proposals to change the terminology and method used in measuring safety records.

The proposals:

1. To measure safety in each mill by "a percentage of perfection"—not the now standard lost time frequency rate.

2. To drop the word safety itself as a title for mill programs and substitute "injury prevention."

PULP & PAPER felt these suggestions were important enough to create an informal "board of judges" from a cross section of industry leaders who would be asked to evaluate these new ideas.

Choice of "experts" was based on two factors: first, their special interest in safety, and second, the fine safety records their companies have maintained. It is not surprising that these two qualifications go together.

Here are members of PULP & PAPER'S blue ribbon panels on broad industry subjects or problems:

J. L. COKER
President
Sonoco Products Co.

A. G. WAKEMAN
President
Coosa River Newsprint Co.

P. F. WATZEK
President
The Crossett Co.

H. E. WHITAKER
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LEE M. BAUER
Production Mgr., Paper Division, Ecusta Paper Corp., Olin Mathieson Chemical Corp.

R. S. WERTHEIMER
Vice President and Resident Manager, Longview Fibre Co.

H. H. ADERHOLD
Plants Safety Representative, Marathon Corp.

E. A. PAUL
Director of Industrial Relations Crown Zellerbach Corp.

F. W. FLYNN
Manager, Port Angeles Division, Crown Zellerbach Corp.

Pro and Con—Change Safety Terms?

Some leaders believe methods of measurement and terminology can be improved; others defend present system

• Would a change in terminology and method of recording accidents help make the pulp and paper industry safer?

This has been the subject of much discussion since Harrison F. Dunning, vice president, Scott Paper Co., and Robert E. Bundy, executive vice president, Potlatch Forests, Inc., raised these questions a year ago.

Mr. Dunning suggested that the industry should drop the negative approach inherent in shooting for a goal expressed as "zero lost-time injuries." He proposed instead that those in charge of safety programs "accentuate the positive" by letting 100% represent a perfect safety record. Later, he agreed that use of "percent" was confusing and suggested use of a positive "safety index" instead. Emphasis would be placed on *increasing* the percent of perfection in a plant, rather than on *reducing* the frequency rate of disabling accidents.

Mr. Bundy, in turn, said he thought the word "safety" has been worn out by overuse, and that the term "accident prevention" is not specific enough. He submitted the phrase "injury prevention," pointing out that it expresses the actual goal of safety programs.

These two suggestions have gained both adherents and opponents during the past year. PULP & PAPER will not say "who is which" but will simply report what some of the opinions are, along with the reasons people gave for holding them.

Some early objections to Mr. Dunning's suggestion seemed so valid that we passed them along to him. He then revised his original proposal to correct those shortcomings (see "A Revision of the Positive Scoring Idea" . . . a separate story with this article).

Are There Other Alternatives? . . .

A critic of the present system pointed out that a mill may have fewer lost-time injuries than another mill and so have a better frequency rating, but investigation might show that the total number of days lost were more. Ten injuries may mean an average of 15 or 20 days lost in one mill; in another each injury might average 60 or 70 days lost.

Also this thought is tossed in the hopper: Would it be more realistic and valuable to rate mills in their safety competition on a basis of total amounts of money paid for hospital expenses and compensation benefits?

Participating in P&P's Safety Panel . . .

Mr. WAKEMAN

Mr. WHITAKER

Mr. SHEEHY

Mr. THOMSON

Mr. WATZEK

Rates charged for compensation are based upon experience. Would these dollars and cents ratings more honestly reflect the results of accident prevention activities in the mills than the present system?

Here follow more comments by PULP & PAPER's panel:

A Change Might Help . . .

"I believe that both Mr. Dunning's and Mr. Bundy's suggestions may be improvements," said one panelist. "However, I feel that the important ingredient is getting dramatic, dynamic, enthusiastic action into the safety program and keeping an ever new, different and vitalized sales approach to safety going continuously. I know this will reduce injuries."

"Perhaps it is time that we should advance from the horse-and-buggy stage in the safety movement," said another. "A new look at the overall accident prevention movement may be desirable."

Said a third panelist: "We appreciate the task assumed by those few industrial pioneers who inaugurated the accident prevention movement many years ago. A method of measurement was necessary and frequency of lost-time accidents was adopted as an excellent yardstick. But over the years we have become so involved with the frequency of lost-time injuries, technique, contests and records that we can be blinded to the real basic problem in the prevention of accidents."

"Any Accident Is Costly . . . "

One member of the panel felt there is no measurement for what he considered a serious aspect. "When injuries to trained, loyal employees result, the cost is beyond figuring in dollars and cents," he said.

Here are comments by panel members who questioned whether new terminology or measurements would help:

"The degree of interest shown by top management has a very marked bearing on the score of the safety record, whether it is measured by frequency rate or any other scale such as percent of perfection."

"It is our firm opinion that a good safety record results from the better-than-average effort on the part of both labor and management. Words alone will never make a better record."

"No matter on what basis we report our results, our problem is foreseeing and preventing the original accident which results in injury. We are not too particular about the method of putting across our safety experience. The important thing is that we keep hammering on the subject in new and different ways, the more attention-arresting, the better."

"The two ideas are interesting but they seem to me to be inconsistent. The first says, 'Let's stop using the frequency rate approach and use a positive approach instead.' The second idea, however, suggests a negative approach instead of an affirmative one, in saying, 'Let's use injury prevention instead of safety.' Somehow or other, I still favor the word safety."

"I say—hands off! Let things remain as they are. Every honorable employer nowadays is strongly supporting sensible safety programs."

Expense of Changing . . .

There were others who felt a change would be extremely difficult:

"I think the percent of perfection approach has value as a gimmick, or angle to work on, but the expense of having to change all reporting methods and forms, and still have to maintain the frequency method for reporting to the National Safety Council seems excessive."

"The present method of determining the effectiveness of a safety program, using the frequency rate, is traditional in all industry. To attempt to change this method with State Labor Departments, Bureau of Labor Statistics, National Safety Council and all associations concerned with safety statistics would be an impossible job. Duplicate statistics would have to be kept, which I do not believe would be practical."

Uniform Measurement . . .

"I think the frequency rate is an important measure between mills of varying size," said a defender of the present system. "It is my impression that, generally speaking, the small shop does not show as good a safety record as the large plant. The reason may lie in the problem of delegating responsibility. In a small plant, safety is someone's part-time job, but in a large one it is usually a full-time job for an able employe relations man. The frequency rate brings this out more forcefully than the percent of perfection figure."

Another commented: "While we do not believe that the actual safety record is the important thing in a safety program, yet it is the one accurate measure of effectiveness and that record should be as uniform in all areas as possible. To maintain this uniformity I feel we must stay with a national formula that is known by everyone."

It was suggested individual companies might use Mr. Dunning's idea:

"One assumption we have to make is that this is not a proposal to change the method of calculation used by the American Standards Association. It took years to get these standards installed on a reasonably uniform basis, and we would be unwilling to recommend a change. This means that the major use of the percent of perfection would be in intra-company publicity. In this way any company would be free to use the method as it saw fit, and find value in it."

Difficult to Figure . . .

"A good many people agree wholeheartedly with the suggestion but agreement is only part of the problem," said another panelist. "Reporting on a percentage basis so that uniform results could be made industry-wide is a statistical problem for which we do not have an adequate answer. We have been working on several ways of reporting our own statistics on a percentage basis but the results obtained do not give us comparable figures as does the formula for frequency rate. We will keep trying."

One member of P&P's panel did some figuring, as follows (based on Mr. Dunning's original proposal):

"We had two accidents in the past year with 234,000 man days worked. The formula is:

$$\frac{(234{,}000 - 2)}{234{,}000} \times 100 =$$

% of perfection = 99.9991452%

This number becomes meaningless. With even 200 accidents, which would be a terrible record, you would still have a better than 99% efficiency on this basis." (See Mr. Dunning's revision of percentage of perfection proposal.)

Adopting "Injury Prevention" . . .

These were comments on Mr. Bundy's proposal to adopt the term "Injury prevention":

"There may be a psychological point that repeated Safety First campaigns over the years have weakened their effect. Talking about injuries may well carry more punch in getting the attention of those who are directly concerned."

"The slogan Safety First seems to have outlived its usefulness. A new phrase emphasizing the responsibility of all of us to do our part in the prevention of all accidents is essential."

"We believe that injury prevention should be used more extensively because that is exactly what we are trying to do. But I don't want to use a title like 'Assistant Injury Prevention Supervisor.'"

Some opposed this change:

"I see nothing to be gained from changing the identification of an effort of long standing. Employes know the word safety from the time the safety pin is used to bring them through the early stages of life."

"I feel that substituting injury prevention for safety would cause much loss during the period of transition. The word safety has value similar to the good will adhering to trademarks of a corporation."

"We feel that the word safety has its place and will continue to be used extensively. The word which we believe is misused is accident, when injury is meant. We now have a monthly plant injury report instead of accident report; we report disabling injuries instead of lost-time accidents, etc."

And By the Way . . .

One panelist boosted the bulletin board terms:

"In our experience we have found that one of the best ways to put the record across to employes is use of a bulletin board to keep track of injury-free days, by department. The term 'injury-free days' has the most concrete referent of any of them. We can all understand what 100 or 1,000 days without a lost-time injury means. As these numbers mount daily, they tend to become self-perpetuating. The longer it continues, the more attention is paid to it, and the more each individual thinks about safety. We're pretty sure of this effect because when the record is finally broken, there is a strong tendency to slip right back to the old frequency level."

"Industry was the first to recognize safety as an integral part of operations," finally summed up a member. "It seems that industry must take further cognizance of the real problem—the elimination to a greater degree of any and all accidents to employes and families."

You have read all the testimony. What do you think of these proposals? Write PULP & PAPER your views.

A Revision of Positive Scoring

Here's how Harrison F. Dunning, vice president, Scott Paper Co., revised his original proposal of a "percentage of perfection" method of scoring mill safety records:

He chose the word "percent" originally because 100% is tops in so many phases of life that he thought it would be a good idea to let it repre-

Participating in P&P's Safety Panel . . .

Mr. WERTHEIMER

Mr. PAUL

Mr. FLYNN

Mr. BAUER

Mr. DUNNING

sent tops in safety, too.

In his own words, "I've often wondered why safety statistics have been uniformly established on a negative basis. When we sell products, we never use the negative approach—but when we report on safety we always use the number of accidents, the severity of accidents and the negative side of the picture. Would we do better, I wonder, if we tried the positive side?"

He suggests that this can be done by developing a safety index, established on a positive basis, rather than the percentage figure he originally proposed. Following is a formula he worked out as a possibility:

$$\text{Safety Index} = \frac{\text{Man hours worked} - (\text{injuries} \times 10{,}000)}{\text{Man hours worked}} \times 100$$

Here is the result when this formula is applied to the example given by one of our panel members:

$$\text{Safety Index} = \frac{234{,}000 - (2 \times 10{,}000)}{234{,}000} \times 100 = 91.45$$

If this figure, 91.45, is subtracted from 100, we get 8.55, which is also the figure that results from applying the present safety formula to the same example. If no accidents occur, the result is:

$$\text{Safety Index} = \frac{234{,}000 - 0}{234{,}000} \times 100 = 100$$

With this index it would be possible to promote the idea, "We have a safety index of 91—let's shoot for 100."

As for severity of injuries, Mr. Dunning feels that the present system is even less effective, because, as he says: "Figures for severity wander all over the lot from zero to many thousands." Here is the formula he suggests for an injury severity index:

$$\text{Severity Index} = \frac{\text{Man hours worked} - (\text{days lost} \times 100)}{\text{Man hours worked}} \times 100$$

Here again, a perfect record with no days lost would give a severity index of 100—a positive result that could be merchandised as such. It would also give figures within a range that would facilitate comparisons between different plants or within one company.

Mr. BUNDY

Mr. Dunning points out that, with these formulas, a very poor safety record could end up with a minus figure—but even that could be dramatized in a positive manner.

He also recognizes the fact that adoption of a new system would make many past records relatively useless for comparative purposes, but thinks that the basic purpose is better industrial safety performance—and not the retention of a bookkeeping system simply because it's already in use.

Whether his ideas are accepted or not, he has provoked some constructive thinking on the subject of safety.

All-Industry Standards Group Votes "No"

Three specialists on safety satistics also gave PULP & PAPER their reactions to Harrison F. Dunning's proposal to scuttle the old "negative" frequency ratings and adopt a new positive approach to scoring mill records. They are:

H. Gene Miller, director, statistics division, National Safety Council.

Harley B. Goodrich, maintenance engineer, Strathmore Paper Co.

Charles R. Hagan, safety manager, Oxford Paper Co.

The latter two are this industry's official representatives on the safety committee of the American Standards Association.

Mr. Miller gave PULP & PAPER this background on the "Standard Procedure" now used to evaluate safety performance:

The precise title is "The American Standard Method of Recording and Measuring Work Injury Experience," code number Z16.1. It was developed by a committee of about 50 people representing interested groups from the entire country, under the auspices of the American Standards Association.

The American Paper and Pulp Association represents the paper industry on this committe and designates Mr. Goodrich and Mr. Hagan as principal and alternate, respectively, on the committee.

Mr. Miller expressed doubt that any important changes would be adopted unless this committee made them a part of the standard procedure.

Mr. Hagan observed that the present code is a revision of a similar one issued in 1945, which is in turn a revision of one published years earlier.

He predicted that it would take at least five years to win over the committee to Mr. Dunning's revolutionary proposal.

In Mr. Goodrich's opinion, the paper industry by itself could not adopt a different standard method from the one used by other industries.

After Mr. Dunning's proposal was called to his attention, Mr. Hagan placed it before the American Standards Association committee, and their reaction was negative. He said that it

Mr. MILLER

took so long to gain countrywide acceptance and understanding of the present method, members were reluctant to undertake a campaign for a new one. In the past it has taken the committee about two years each time to agree on the two revisions that have been made.

Teachers To Learn About Wisconsin Paper Industry

More than a score of midwestern college economics teachers will gather this summer at Univ. of Wisconsin for a four week's study of Wisconsin's progressive paper industry, including a six-day tour through the state's papermaking areas.

"Their experiences will be translated into material for use in teaching their college classes," says George Richard, assistant director of the "Economics-in-Action" program—now in its fourth year at Wisconsin. The course director, Prof. John L. Miller of the Wisconsin Extension Division, has been assisted in working out the 1957 program by this committee from the industry:

Elmer Jennings, Thilmany Pulp & Paper Co.; Carl R. Geisler, Marathon Corp.; George Kress, Green Bay Paper & Pulp Co.; L. E. Phenner, Kimberly-Clark Corp.; Benton R. Cancell, Rhinelander Paper Co., and Neil McLeod, Institute of Paper Chemistry. Coordinator of the industry's part in the course is Leonard E. Pasek, Kimberly-Clark Corp.

Financing the all-expense fellowships for the teachers are 27 companies, including paper companies, suppliers and others.

New Far North Mill Makes History

• A new major producer of market pulp—Alberta Hi-Brite kraft—came into production in the third week of April at Hinton, Alta.

The new North Western Pulp & Power Ltd. 430-ton (rated capacity) mill, jointly owned by St. Regis and North Canadian Oils, made history for this industry when it started up the first continuous digesters for a high quality grade, fully bleached kraft pulp ever installed on the North American continent.

In addition, the two vertical screw-fed Kamyr design digesters are the largest of their type in the world, the first ones capable of producing 200 to 250 tons each of quality kraft pulp per day. The Hinton mill, with much of its pulp already sold, now becomes a supplier by rail freight, principally to Midwest and Eastern U.S. paper mills. For foreign and overseas markets, St. Regis will now lean heavily on oceanborne bleached kraft pulp made at its Tacoma, Wash., seaport mill.

Adams Heads $330,000,000 Company . . .

In the same week of the Hinton start-up, William R. Adams, 50-year-old native son of Albany, N.Y., became the new president of St. Regis. His election to the presidency in the far-flung $330,000,000 (sales) company seemed most timely, as it virtually coincided with the first digester "blow" ever witnessed or heard in the resource-rich province of Alberta. The building of this mill was his "baby," as it also was of Vice President Justin McCarthy, chief engineer of all St. Regis operations, and U. J. Westbrook, supervisor of all St. Regis pulp mills.

Mr. Adams came up to the presidency through the ranks of technical and operations experience from a backtender's job. He graduated from Union College, class of 1928, where he was a football star among other things. He received an honorary laws degree from Union in 1953. His first job in the industry was in the Dexter, N.Y., mill in 1935, starting as a helper. He joined St. Regis in 1937 at its Oswego, N.Y., mill as a tuber backtender. Many other experiences in St. Regis mills followed, leading to v.p. in 1948 and v.p. in charge of all production in 1953. He is also now president of North Western Pulp & Power, Ltd.

Meanwhile he had married a Watertown, N.Y., girl and they have two boys and a daughter.

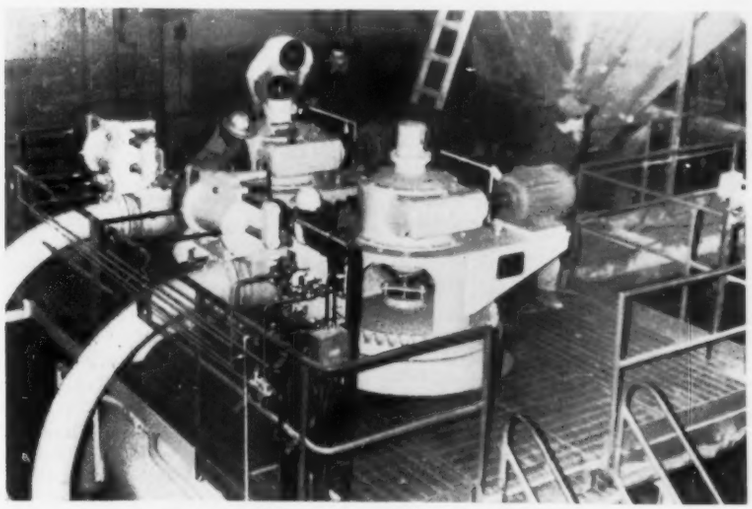
Roy Ferguson's "Baby" . . .

Roy K. Ferguson, who continues as chairman, but retires as president after holding that office 23 years, can also call Hinton his "baby" as far as its conception is concerned. It was back in April 1954, Mr. Ferguson recalled, when he first met Frank E. Ruben, an ex-Los Angeles realtor who had got hot about oil in Alberta. Mr. Ruben, meanwhile, had picked up a timber grant in Alberta back in 1951 and obtained extensions of it from the province while trying to interest Canadian or American pulp men. Sparks began to fly, however, when he finally met Mr. Ferguson. Within two months—in June 1954—one of the fastest pulp deals in history was made.

As Hinton comes into production, other top positions are created in St. Regis. Edward R. Gay, who had been exec. v.p., is now vice chairman of the board. Benton R. Cancell, president of Rhinelander Paper Co., St. Regis subsidiary, and Arch Carswell, former v.p. for sales, are new St. Regis executive v.p.'s. Mr. Cancell had been a St. Regis production executive and

New St. Regis President
PULP & PAPER snapped this picture of the new president of St. Regis, Albany, N.Y.-born WILLIAM R. ADAMS at Hinton, Alberta. Dressed as he might have in the days when he started with St. Regis as backtender, he is showing off the 100 ft. sticks of lodgepole pine, which comprise 50% of wood supply for Hinton.

New Exec. Vice Presidents . . .
BENTON H. CANCELL (left), from manufacturing ranks primarily, and ARCH CARSWELL (right), from sales, are new executive vice presidents of St. Regis.



How Top of Hinton Digester Looks
Two chip feed lines to each continuous digester—fed in steady flow with chips conveyed in liquor, continuously drawn off. Moving down digester by gravity, chips are first impregnated with liquor, then heated to desired temperature by circulating liquor horizontally through the chips column.

also was a Powell River official before he joined Rhinelander.

The Timber Deal . . .

North Western P&P pays fixed official prices for 20 years for its timber. For the straight-growing lodgepole, which is half the supply, 55 cents a cord; for white spruce, about one-fourth the supply, $1.50 a cord and average stumpage price is 85 cents. Present leasehold is for 2,000,000 acres but in 13 years, option can be taken on another of 3,840,000.

When a PULP & PAPER editor visited Hinton recently, Mr. Adams, also there, remarked: "This timber country reminds me of the rolling hills of New Hampshire. It is rougher country than Maine, but not as rough as much of eastern Canada."

Not Alarmed About "Over-Capacity" . . .

As Hinton started, Wall Street circles seemed most concerned that St. Regis had cut its dividend to 35 cents from 50 in the first quarter, 45 a year ago. Bowing out as president, Mr. Ferguson took this in stride:

"We have been through this sort of thing before. I believe that the new capacity can be absorbed better today than at any other time in my 40 years in the paper industry."

Kraft sales vice president Reg Vayo, H. C. (Pete) Peterson, manager of kraft sales; William M. McNair, head of pulp sales, Bill Crosby, pulp sales in New York, Ralph Wehmhoff, pulp sales in Chicago, and Colin Marquis, pulp sales in Toronto, will be chiefly concerned with the sale of Alberta Hi-Brite kraft.

Cooking Controls . . .

St. Regis men who saw the Kamyr digesters in smaller European mills are convinced it will give them closer cooking controls, exceptional uniformity and preserve strength. These digesters provide independent controls for temperature and pressure.

The pulp is being bleached six stages, including a double treatment of chlorine dioxide, and is equipped with a new unusual upflow type of bleaching tower by Paper Machinery Ltd.

New V.P. in Rhinelander

As Benton R. Cancell, president of Rhinelander Paper Co., became also exec v.p. of St. Regis, it triggered promotions under him at the Rhinelander, Wis., subsidiary. DR. W. R. HASELTON (left), mill manager, was made vice president—operations. He is a Rensselaer Polytech grad and his ph.d. is from the Institute of Paper Chemistry. W. J. DAVIS (right) former Chicagoan and Northwestern U. product, and director of sales, became vice president—sales.

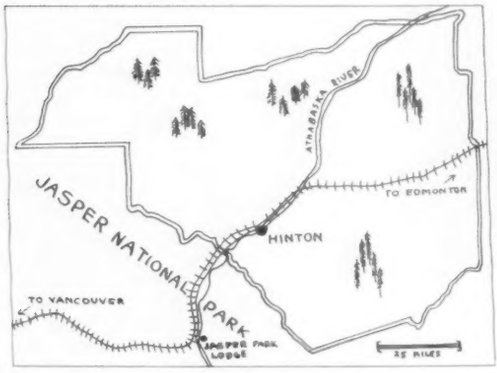
Record Number of Dryers . . .

Dominion Engineering built the 168 in. wide Fourdrinier-Minton dryer (66 dryers, a record number for such a unit).

The Athabasca River easily provides the 25 million gallons of water needed, and could easily provide 50,000,000 if the mill reaches potential doubled capacity.

A 140-mi. long natural gas pipe from 40 miles west of Edmonton provides fuel. Two power boilers may be fired by either gas or bark.

Wood is processed with Horton drum barkers, Carthage Norman chippers, Rotex chip screens. Sherbrooke (Impco) bleach and brown stock washers, Ahlfors screens, Bingham pulp pumps, Whiting-Swenson evaporators, Combustion Engineering recovery boiler with Bailey controls, Allis-Chalmers lime kiln, Dorr-Oliver causticizing, Koppers precipitators, Link-Belt conveyors, and Hooker equipment for chlorine and calcium chloride are among interesting equipment in pulp mill and recovery phases. Bauer Centri-Cleaners upgrade the pulp and after the Dominion machine is an elaborate automatic finishing system by Lamb-Grays Harbor Co. Turbogenerator and switchgear are General Electric and dryer machine drive and motors are Westinghouse. The complete story of the Hinton mill will appear in a later issue of PULP & PAPER.



Hinton Mill and Its Timberlands

Double line shows the 6,000 sq. miles of timber which will support the Hinton mill. It is 50 miles from Jasper. About 200 miles from Edmonton.

New "World's Largest" Machine to Start Up in Jan.

The Black-Clawson Co. Paper Machine Division at Watertown, N.Y., is building a new "world's largest" machine—a 342-in. high speed newsprint machine for Great Lakes Paper Co., Ltd. at Fort William, Ont., with start-up planned for Jan. 1958. Combined facilities of The Black-Clawson Co. in the U.S., Canada and England are furnishing the machine completely, including headbox, Hydroflyte permanent cantilever Fourdrinier, vacuum pickup press section, dryer part, reel and slitter-rewinder. It will produce standard 32 lb. newsprint.

This will be Great Lakes Paper's No. 4 machine. No. 3 machine, a 272-in. Fourdrinier, is also being supplied by Black-Clawson. It will produce about 300 tons per day of 32-lb. newsprint. It is now being erected at Fort William and has basically the same elements as the No. 4 machine.

Great Lakes Nos. 1 and 2 machines, also newsprint, were furnished by the former Bagley & Sewall Co., now B-C's Paper Machine Division. One of these is the widest machine in operation at present in the Western hemisphere—305 in.

Another transitory "world's largest" is the No. 5 machine at Bowater's Kemsley Mills near Canterbury, in Kent, England. It has a trimmed width of 300 in. (PULP & PAPER World Review Number, 1954).

50th Year Celebrated By Appleton Coated Paper Co.

Richard W. Mahoney, president, announces several events will mark the 50th anniversary of Appleton (Wis.) Coated Paper Co. this summer.

There will be a series of tours in June, with all company production units in operation. In late May there was a kickoff birthday dinner for 25 year employes. TAPPI delegates to the Milwaukee Coating Conference and teachers from Appleton schools were on tours late in May, too.

From the Nation's Capitol . . . a first-hand report tells you . . .

What's Happening to You—on the Potomac?

Read about:

- Ike's Press Conference
- Reuben Robertson, Jr.'s Goodbye
- "Firing" of Forest Products Division
- Budget Cuts Predicted
- Big Gathering of Pulp-Paper Leaders
- Sobering Survey of Future Demand
- Lausche's Views on "Pilot Plants"
- Secret Foreign Investors in U.S.
- That Rackets Hearing
- Ike's Economic Advisor's Views
- Pollution and Basing Point Bills
- Newsprint Hearing and Postal Rates

By ALBERT W. WILSON
Editor, PULP & PAPER

—Washington, D.C.

● As you taxi from West Wing of White House to Commerce, from Commerce to Senate Office Building, etc., you keep recalling what that man said at breakfast at the Shoreham about this being the "most unreal city in America." It is a soft-like city, too, after New York or Chicago, but maybe that's soft like the mail fist in velvet glove.

Anyway, it is a typical day in Washington and you are here trying to find out what gives—what is going to affect the pulp and paper industry and the people who work in it.

You sit in the second row of Ike's regular Wednesday press conference, but being "visiting" press you can't ask any questions. You are just about three arms' lengths from Ike as he stands there like a schoolmaster and fires back real replies—some long ones—to a kaleidoscope of 34 questions in just exactly 30 minutes.

Ike Looks Healthy . . .

A mighty alert and healthy appearing man for mid-60, who has plenty to say, and willingly, on problems ranging from the Suez to labor rackets, flying missiles to highway billboards, and crop surpluses to natural gas (he doesn't use notes; remembers his own personal gas bill is $3.31 a thousand). Mrs. Mae Craig, in a flower hat, Jim Reston, John Steele, William S. White, Dave Sentner, John Hightower, John Scali—these and many others are on their feet as the President swiftly points to raised arms for the next question. A Chicago reporter, who a week before made the President boiling mad for a moment, with a question insinuating he was using a helicopter for golf, was treated as though nothing ever happened.

There are "throw-away" questions. These are requested of news services by little jerk-water papers, trivial questions, wasted. There are the "loaded" questions . . . purely politically inspired. You wonder if fewer questioners, better preparation, might not make more sense. You remember sitting through a couple FDR sessions. He was always wheeled in before the reporters entered. The session was leisurely, answers often political speeches, or long personal attacks.

Ike's session is in the historic Indian Treaty room of the old State Dept. Bldg., now Executive Offices, across the street from the White House. The room is only 20 ft. wide, 40 ft. long, with a narrow balcony all around—room for one row of seats up there, behind a wrought iron rail. Altogether, seats about 200 . . . a few middle seats have names of big papers or services right where they are sat on—reserved. All others are catch as catch can. Newsreels and television in back row. Red and black marble inlay around the walls. Only Jim Hagerty (press men say he is fairest and best press secretary in a generation) and Wayne Hawks, pinch-hitting for Murray Snyder, sit behind the President. At least two of four guards at the door glance at your invitation "from the President" as you walk in, and it has been checked by others before.

Appointment . . . Pat on Back . . .

In the White House press room you see a plain white sheet of paper tacked up with names of only 3 or 4 persons who have appointments with the President.

"2:15. Reuben Robertson."

That, of course, means Reuben B. Robertson, Jr., not his father, going in to get a pat on his back from Ike for 20 months' service as deputy secretary of defense, before going back to Hamilton, O., to resume the presidency of Champion Paper.

The Big "Firing" at Commerce

This is a day of bustle at Commerce. You pass the big display ticking off an addition to the population every few seconds (it seems), up the brand new automatic elevators, to the Forest Products Division of the Business and Defense Services Administration. Everyone in the F. P. Division has just been fired—by Congress.

Morlan J. Grandbois, coordinator of marketing, St. Regis, whom you first met when he was sales manager at the old Bryant mill in Kalamazoo, had just started hanging his hat in Commerce offices, as the new director of the division, going down there for what was to be a year's "loan" by St. Regis. And there is W. LeRoy Neubrech, assistant director for pulp, paper and paperboard, who has somewhere around 25 years service as the pulp and paper specialist in Commerce. But Roy has much service, he is safe for some other job if he wants it. You are surprised to know he is just a couple years from retirement.

Fired? Yes . . . but when this sentence is printed they may be sitting pretty again, back in their jobs. A House committee had simply struck off all appropriations for a Forest Products Division in their search for ways to pare Ike's $72,000,000,000 budget. The same Congressmen may put the funds back in the budget before they are through. Or, who knows what the Senate will do? The House has cut presidential budgets before, only to have the Senate restore the cuts.

Budget Cut Predicted . . .

You have an opportunity to quiz one of the most up-and-coming younger men in Congress about the budget. He is Rep. Wilbur D. Mills (Dem., Ark.), 47-year-old graduate of Harvard Law, whose assignments on ways and means, internal revenue and non-essential federal expenditures put him in a key position to really know what's going to happen to your tax dollar. You hear he is being groomed to succeed Sam Rayburn as speaker of the House.

You ask Mr. Mills how much he really thinks will be trimmed from the budget. Without hesitation, he predicts a $4- to $5,000,000,000 cut. And he says it will be almost entirely in the defense budget and in economic aid to foreign countries—but not military aid. Why? Because these are the only items which have no pork barrel support, and the only ones where sizable cuts could be made (according to Mr. Mills). He is not saying what he favors—but what he expects.

You ask him what fundamentally is the difference in the position of

Ike Talks Freely to the Nation's Press . . . and P&P's Editor

Democrats and Republicans as regards taxation. He says the only real difference is that one party doesn't want to let the other party get any credit for tax cuts.

You hear from him the amazing statement that there are an average of 360 permits every month for tax exemption granted to so-called social welfare, educational or similar organizations. The press doesn't publicize these facts—the public doesn't know "or it would be outraged," he says. He says another scandalous gap in tax revenue is the depletion allowances being given to all kinds of non-metallic industries . . . "now we've got everything but air in the act," he said.

Pulp and Paper "Brass" . . .

You are in Washington just ahead of the biggest pilgrimage of pulp and paper "brass" to the capital in two or three years. Invited down to see Commerce Dept.'s long "hush-hush" pulp-paper-board supply-demand survey for years ahead, and to take copies home to study privately.

The study, prepared at request of a Congressional committee, has "given pause" to quite a number of top leaders in the industry. They see in it a need for reconsideration of expansion programs and better "timing" of expansion in the next two, three and four years.

Can this industry stand up to a 40% increase in capacity by 1959? Demand is just as great, if not greater, this year, but capacities bear watching. Big companies are holding the line on prices . . . holding an umbrella over some smaller ones, one Washington visiting businessman says. Some 7-day mills have gone to 6-day or less, some have shut down a week or longer and the July vacations may provide a welcome cushion. A little over-capacity can be healthy, but statesmanship is needed.

You ask about Secretary Weeks' statement that budget for forest roads could be cut. Commerce men say what he meant was the connecting roads with forest roads—after all Agriculture, not Commerce, has authority over government-owned forest roads.

You Hear Brundage . . .

You hear Percival Brundage, budget director. Sen. Byrd was right. He was pro-high budget. Shouldn't a budget director be on the other side—trying to hold it down?

You are told that literally hundreds of thousands of the same people are in Washington who were there before Eisenhower. A few key jobs have changed. But the new ones must depend on the old Roosevelt-Truman boys for advice. Colleges and schools are raided. Shortage of teachers? They prefer $15,000 a year or more in Washington. Many independently wealthy, dedicated people work here, too. Lower tariffs, freer trade—that definitely is policy and no opposition.

A Battery of Senators . . .

You participate in a most unusual press conference arranged especially for Associated Business Publications editors (ABP is the "blue ribbon" organization of industrial and business journalism and PULP & PAPER is proud to be a member). A whole battery of senators face you, from behind a wooden rail in Senator Fulbright's banking and currency committee hearing room, to answer any questions you want to fire at them.

You are very impressed with the intelligence and quiet strength of Fulbright. Also of Bricker of Ohio. Ohio's Lausche is there, too. What a voice! Reminds you of the voice of Roosevelt, the charmer. Maybe you are wrong, but John Sparkman doesn't seem in the same class . . . maybe

because he seemed too eager to get away from you editors, after he said his piece about needs for housing. Indiana's Capehart grows on you. By the end of the session, he rates tops. Now, as for Senator Robertson of Virginia . . . there's a story-book senator for you. He personalized everything he talked about, even went back to McKinley-Bryan (but admitted he wasn't there then). Byrd "carries" him in Virginia, you hear.

What They Said

Your turn to ask a question. You ask Lausche about government in business. He says he thinks government should get out of plants it owns except for "pilot type plants" where research of general good can be done.

Capehart and Lausche express great concern over the fact that foreigners (Russians included) can secretly buy controlling shares in American industries through Swiss banks. A Swiss law forbids these banks from disclosing for whom they are buying shares. We need a law to stop this, several senators agree.

"Speculators are returning to the practices of the '20's," said Sen. Lausche. "There's more high pressure. I hear more and more talk of financial wizards. There were financial wizards in the '20's, too. I don't like it."

The Big Rackets Hearing

You duck into the big rackets hearing which Senator McClellan has been conducting—very much on TV. That's a *management*-labor inquiry, by the way, in case you thought it was all labor. Some management collusion with Dave Beck is coming out, you hear. The afternoon session just started. Sen. McClellan is alone at the committee table, of course with his young counsel, Bob Kennedy. His brother, Senator Jack Kennedy, was up there, buzzing in his brother's ear, and dashes out past you . . . gives you a big smile, must have thought you were a Massachusetts constituent! None of the other senators have arrived, some won't. There's the empty seat of the then dying Joe McCarthy. Bitterest battles of his career were right in this Senate room. You wonder, as you watch and listen, how witnesses can keep their thoughts collected with the hot TV lights pouring down on them, camera bulbs flashing, and distracting noises.

Economic Advisor to Ike . . .

You meet with Gabriel Hauge, special economic advisor to President Eisenhower and former editor of *Business Week*. He was one of team that met with Ike for regular "pre-press conference"—preceding the one you attended. Readies the president for expected questions—but not many of them. The president didn't get any coaching when he laughed down the question about his brother Edgar's criticism of his budget—"Edgar has been criticizing me since I was 5 years old." That was Ike's own spontaneous quip—a perfect one for it made the Eisenhower brothers just like a million other American brothers, including the always critical older one.

Mr. Hauge says he is a member of the "extreme center"—not left or right. The ends of sound economics and equity and social justice must be the same. We must rely upon the market mechanism, trust the markets, and on incentives and rewards (rewards for success). Better and higher paid jobs appeal to more Americans than subsidies, he said. The government does not have the power to lick "creeping inflation" without help of business and industry leaders. We need to encourage savings. He indicated he expects a rousing fight in Congress over foreign aid.

Other "Experts" . . .

You hear Louis Paradiso, chief statistician of the U.S. Chamber of Commerce, say business conditions are all right, so far . . . they can be kept that way. This little man rates high with government folk. You hear Nathan Goldfinger, economist for AFL-CIO, argue that the unions should go after higher wages because they are carrying out a democratic right and duty. Fine, but what about the effect on inflation?

You try to pin down some information directly vital to pulp and paper.

The price discrimination bill hung itself. This was the basing point price bill. Harold Murtfeldt, v.p. of Consolidated Water Power & Paper, distinguished himself in Washington by his presentation against it. Congress saw the light—that this would be a "lawyer's paradise."

Don't be concerned any more this session of Congress about pollution bills. They are all out the window.

Hearings are completed on the 60-day pre-merger notification bill and that seemed a sure one to pass this Congress.

Newsprint Inquiry . . .

Sen. Potter (Rep.) of Michigan is keeping alive his resolution for a newsprint price fixing inquiry. It gives him something for a campaign this fall, where it looks like Walter E. Reuther and Soapy Williams will beat him, anyway. Too bad newsprint must be the "fall guy." But newsprint supply has eased . . . this should rob Potter of some of his thunder.

RICHARD G. McHUGH . . . he wanted to go in shipping business, but a maritime magnate advised him to go into pulp and paper with . . . "if I had a son, I would want him to go into that industry."

How a "Pulp Peddler" Got Into the "Finest Industry"

A "pulp peddler" with one of the largest newsprint and pulp companies today is Richard G. (Dick) McHugh, who now makes several trips a year to pulp consuming mills throughout the Middle West and Eastern United States, starting from his base at Vancouver, B. C.

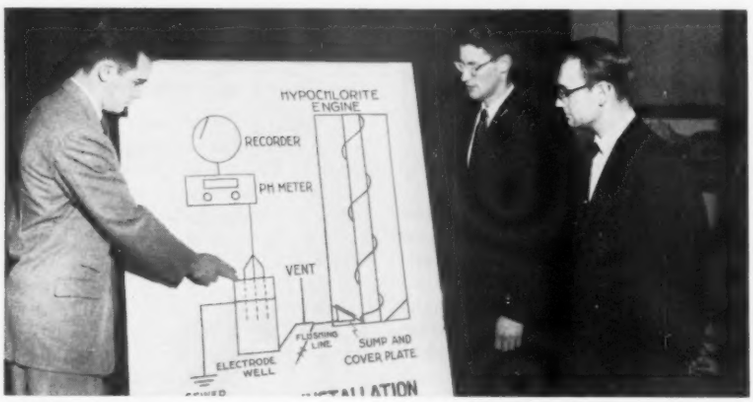
Friends of R. G. McHugh, manager of Powell River Sales Co. Ltd., newsprint and unbleached sulfite pulp sales, say he might have been president of the New York Stock Exchange if he had persisted in his original line of work. One of his first jobs as a young man was in a Wall Street investment house at the tag end of the depression. Business in the back office, away from the thrills of the exchange floor, did not appeal to him, so he resigned, just before he was fired (he says).

He was determined to go in the shipping business. But a shipping magnate talked him into going into pulp and paper—"The finest personnel I ever met are in pulp and paper,—if I had a son I would want him to go into that industry," said the shipping man. He promised Dick a job in shipping if he didn't like pulp and paper after a six months' trial. So Dick joined the New York staff of G. F. Steele & Co., selling agents for big newsprint firms. In 1939 he was moved to Texas to handle Powell River newsprint in the Southwest United States for Steele & Co. In 1946 Powell River Sales Co. Ltd. purchased the Steele Co., and he moved back to New York. In 1951 he was moved to Vancouver as manager of sales.

Dick was born in Toledo, O., on Jan. 12, 1912, and was raised in Westfield, N.J.

Compete for Shibley Award

Left to right: Winner A. J. BEAUCHAMP, Crown Z, Camas, demonstrates unit for titrating pulp permanganate numbers automatically to Program Moderator Dr. JOHN M. McEWEN, technical director of Weyerhaeuser Everett kraft mill, and EDWARD COGAN, contestant from Publishers' Paper Co., Oregon City.



Left to right: PHILIP L. CARTER JR., of Weyerhaeuser Everett sulfite mill, displaying diagram of pH recorder installation used in conjunction with hypochlorite bleaching engine to indirectly measure viscosity and brightness of sulfite pulp to fellow contestants ROLAND J. STANTON, Ketchikan Pulp Co., Ketchikan, Alaska, and RICHARD R. CASPER, Research Dept., Pulp Division, Weyerhaeuser Timber Co., Everett.

Progress in Cost Saving Quality Control

A "do-it-yourself" project saves time of CZ technicians and won a $100 Shibley Award for a young technician.

His presentation on "Automatic Titration of Pulp Permanganate Numbers" covering construction, use, operational and result phases of a mechanical "tritater" won top place in Pacific TAPPI's 1957 Shibley Award contest at Everett, Wash., Apr. 5, for Albert J. Beauchamp, instrument technician of Crown Zellerbach Corp., Camas, Wash.

As pointed out by Mr. Beauchamp, the general trend of increased production makes desirable "that scheduled control testing rates be amplified without additional technical costs per ton of pulp." The apparatus covered by his presentation consists of electronically controlled delivery valves driven and timed in logical sequence nearly to the point of final titration, at which point an electric eye, activated by light passing through the solution, shuts off a drop-by-drop delivery valve on completion of titration.

According to John M. McEwen, technical director of the Weyerhaeuser kraft mill at Everett and immediate past chairman of Pacific TAPPI, this 19th Shibley Award contest brings the total of participating contestants to 68. In appraising results of the program (established in 1939 and named in honor of the late Kenneth "Cap" Shibley, prominent West Coast chemical engineer), he pointed out that these former participants—both winners and runners-up—now occupy important positions in the industry or allied organizations.

Participants this year include:

Edward Cogan, Publishers' Paper Co., Oregon City, Ore., treating on "A Method for Determining Hydrosulphite Demand in Groundwood Brightening." This concerned use and results of a new type reflectance meter ("Agtron," manufactured by Magnusson Engineering, 509 Emory St., San Jose 10, Calif.) which he says circumvents need for handsheets with their inherent variables; chemical feed can be adjusted within five minutes of sampling instead of requiring one to three hours to make the change. "While average quality remains the same," Mr. Cogan states, "advantages are had in maintaining pulp uniformity and in saving semi-skilled man hours."

Philip L. Carter Jr., of Weyerhaeuser's Everett sulfite mill, was concerned with "Hypochlorite Bleaching, Using a pH Recorder." He presented the advantages provided by a continuous pH recording system in hypochlorite bleaching for quality control, the pH electrodes immersed in liquor flowing continuously from base of a hypochlorite bleaching engine. He reported that initial results have been "encouraging," a request for an additional meter has been included in the current budget, and "eventually all of our eight hypochlorite engines may have a pH recording system."

Richard R. Casper, Weyerhaeuser research, Everett, reported on "An Investigation of Centri-Cleaner Performance Using Radiotracers." His participation concerned a laboratory test, using radiotracers, the primary purpose of which was to investigate the influence of stock consistency in a Bauer Centri-Cleaner used as a purifier for kraft dissolving pulp. In this test radioactively-tagged fibers of a nature detrimental to viscose filtration were added to previously "centri-cleaned" pulp. The mixture was then "re-centri-cleaned" at several consistencies and samples taken for determining radioactivity content as well as for the making of viscose. The variations in radioactivity content, together with the filtration values, showed marked improvement in Centri-Cleaner performance when the consistency of incoming stock was lowered to ½%.

Mr. Casper expressed conviction that radiotracer techniques, used with adequate tagging procedures, offer "almost unlimited" application in the industry.

Roland J. Stanton, chemical engineer at Ketchikan Pulp Co., Ketchikan, Alaska, presented techniques for "Evaluation of Watershed Potential" as used by his organization to develop basic water-supply information on which to base long-term, continuous mill operation.

They Symbolize Skills of This Industry

They symbolize skills of about 470,000 in pulp, paper and converting—half that number in pulp and paper primary plants. They also symbolize skills of 4,500 employes of Minnesota & Ontario Paper Co.—who made the developments reported in the accompanying story about M&O possible.

Here are the skills they represent—and who they are—left to right:

CONSTRUCTION—Clifford Hill . . .
ENGINEERING—Charles Swain . . .
OFFICE—Barbara Crawford . . .
MANAGEMENT—William H. Schlafge . .
SALES—William Skwarok . . .
LOGGING—Melvin Johnson . . .
PRODUCTION—Nels Olander . . .
RESEARCH—James Lyman . . .

Who Are They? Symbolize Industry Skills

How this industry has upped production 80% and 50% while only requiring 19% more workers

● One of the least known but most sensational developments of the 1950's in the pulp and paper industry is the greatly increased production per worker.

Do you know that since 1949, while paper and paperboard production in the United States was increasing 50% and woodpulp production was increasing over 80%, the number of workers in the industry was increasing only 19%?

Our cover picture this month is designed as a tribute to the people who ARE this industry.

The individuals shown on our cover represent the varied basic skills—all needed for the success of the pulp and paper industry, all contributing by their teamwork and increased skill and efficiency to the amazing higher productive rate per worker.

Automation, mechanization, higher speed machines—all these have been important factors in the greater productivity per worker. With costs continuing to rise in 1957, the industry continues to press for more ways of offsetting them by increasing efficiency of manufacturing and of distribution.

Along with higher quality products, higher quality workers are being developed. The workers of the 1950's have more skills and more usefulness than those of the 1940's. They are paid more, too. Since 1949, the earnings of hourly workers in pulp and paper mills have increased 43%. Those of all industries in the U.S. meanwhile, only increased about 30%.

Paper and paperboard production in the U.S. hit a high of 31,335,853 tons in 1956, an increase of 11,000,000 tons since 1949. Pulp production zoomed up to 22,121,285 tons, an increase of 10,000,000 tons.

In comparison, the number of wage earners in the pulp, paper and paperboard mills rose from 198,000 to about 235,000 in the same period of time—only 19%. Number of production workers in pulp, paper, paperboard and converted products also increased only about 20%—from 300,000 to about 470,000. These include workers in paper coating and glazing companies, paperbox manufacturers, pulp goods and other converted paper products.

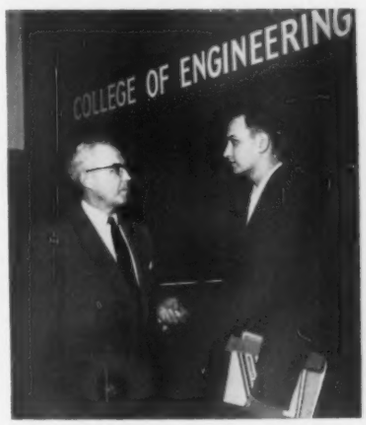
In line with the increased productivity per employe in this industry, figures recently issued by the Census of Manufactures show U.S. production of paper and paperboard was at the rate of 13.4 man-hours per tons in 1947 and had risen to 11.0 man-hours per ton by 1954. But while man-hours were being reduced, wages per ton were climbing from $17.14 to $21.21.

Crown Zellerbach Corp. recently reported that mechanization and automation and increased skills have brought about a 3% reduction each year in recent years in man-hours required to produce a ton of paper.

Mando is a Typical Case . . .

The picture on our cover is of people in Minnesota & Ontario Paper Co. They are typical and their respective skills are typical of those in 500 other U.S. pulp and paper companies. Skills and teamwork of these M&O people have been important factors in the improvements, expansion and increased production which is described in the story on the following pages about M&O.

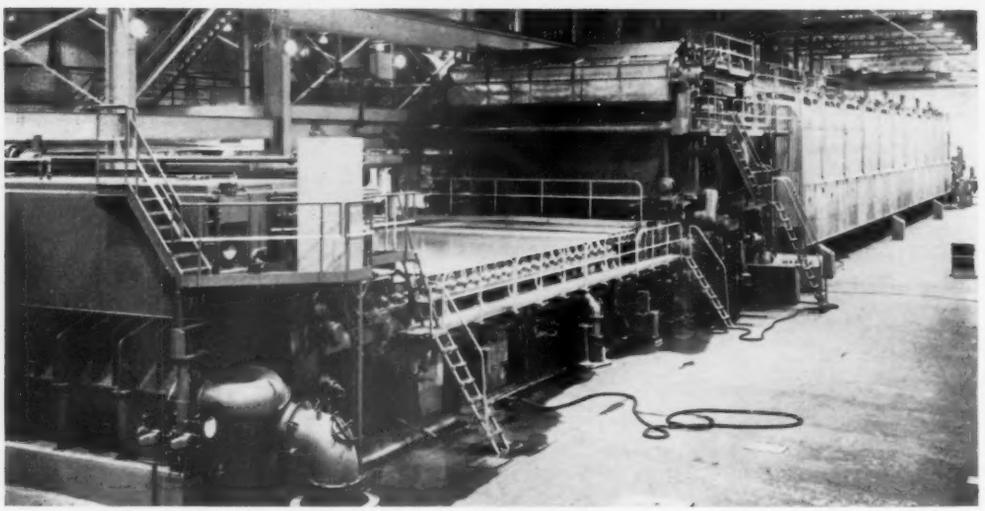
William H. Schlafge (pronounced "shlahfgee"), who represents management in our cover picture, is general manager of M&O operations at International Falls.



The Search for Engineers

Like other companies in this industry, Minnesota & Ontario Paper Co. must go to the universities and colleges and compete for the talents of the graduates. Here, B. J. SHIELDS (left), Mando engineer, greets a University of Minnesota engineering student on the campus. Interviewing undergraduates is important part of Mando recruitment.

How Kenora Looks Today . . . Dark Buildings (right) House New Machine and Grinders



Mando's New 252 in. High Speed Newsprint Machine

Expansion Completed at Kenora Newsprint Mill

New No. 10 Beloit Fourdrinier machine will add 150 to mill payroll and produce up to 100,000 tons annually

● New record high production of newsprint in North America is expected by close observers of the industry in both the United States and Canada to put a very wet damper on the threatening Congressional investigations of newsprint prices.

If this is so, the Kenora, Ont., mill of Ontario-Minnesota Pulp & Paper Co. Ltd., subsidiary of Minnesota & Ontario Paper Co., Minneapolis, is doing its part. It is one of several mills, with converted or new machines, or speeded up machines, which are responsible for total North American production of 738,658 tons in March, more than ever produced before in any single month.

In early April, a new No. 10 Beloit Fourdrinier machine at Kenora was producing at the rate of 1,800 fpm, turning out about 260 tons a day. It is hoped to gradually speed up to 2,500 fpm, with its pickup felt arrangement an effective aid to higher speeds. This means 100,000 tons annually.

The big 400 ft. long machine, weighing over 5 million lbs., and turning out a sheet 21 ft. wide, went into production very smoothly. It produced its first roll of commercial paper on Jan. 29. So, it had an important role in helping Canada to set a new all-time record for newsprint production of 1,651,725 tons for the

first quarter of 1957, 3.8% higher than for the same period last year. U.S. and Canadian mills combined set a record of 2,124,000 tons—up 5.7%.

When fully operating, the new machine and supporting facilities will add 150 persons to the mill's payroll, creating some $625,000 worth of purchasing power annually. Additional wood requirements of 120,000 cords annually will provide jobs for some 50 more men and provide a market to about 200 extra independent operators and tree farmers.

Thus, No. 10 will provide work for about 400 additional local people and put an extra $3,125,000 into circulation in the community, not counting the extra tax dollars.

New Grinders, Screens, Refiners . . .

A new three-story grinder room houses eight Koering-Waterous superhydraulic magazine grinders, in four lines with a bay left for a future line. The grinders, two to a line, are driven by 5,500 hp synchronous General Electric motors. Color dynamics were used throughout the new grinder room to provide safer working conditions and more pleasant surroundings.

New screening equipment includes six "Mark A" Cowan fine screens and one "Mark A" secondary screen. Fifteen Cowan gravity deckers were installed, replacing 20 small conventional deckers. Pulverized grinder rejects pass through four Sprout-Waldron refiners, a Waterous centrifugal screen and are then pumped to a battery of 18 primary Bauer cleaners.

A third sulfite digester is 17 ft. across and 56 ft. high, with 1 1/16 in. steel shell. Built by Dominion Bridge, it has eight 2-in. steam nozzles in the top and a circulating system.

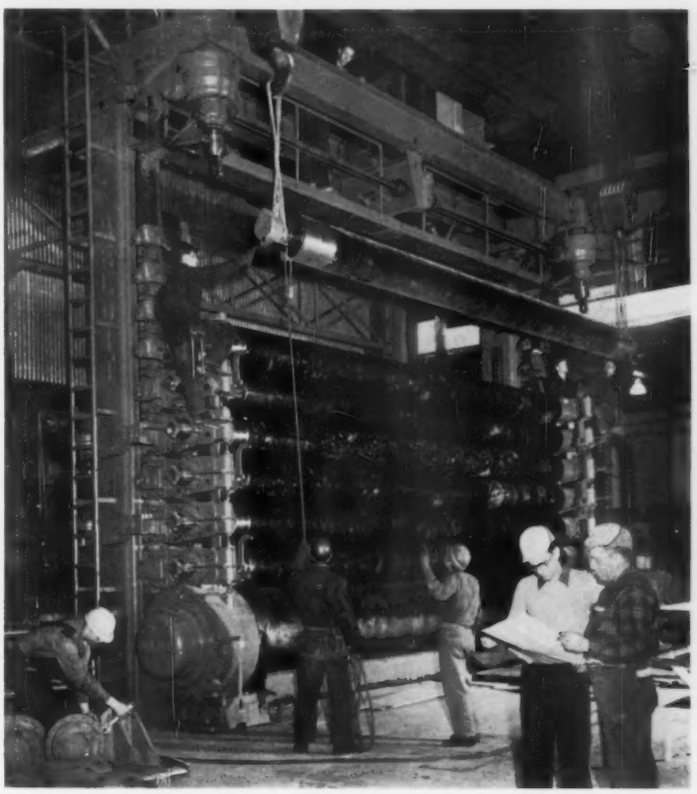
Sulfite screen room and reject refining equipment is now in the sulfite mill and includes two Jonsson screens with ¼-in. perforated screen plates, three "Mark E" Cowan fine screens (.065 perforations), one Junior Cowan reject screen with .065 perforations, two Cowan sulfite deckers and one Trimbly stock regulator. Reject refining includes a class B Jeffrey shredder, a 36-in. double disk Bauer refiner and a Haug drainer, a Reeds Spafford fine screen with .055 perforations and seven No. 606 Bauer cleaners.

A new Foster-Wheeler Riley Type RX boiler with pulverized fuel firing is designed to burn lignite. The capacity of the unit is 159,000 pph at 265 psi and at 200° F. The unit is equipped with a tubular air heater and precipitation Multi-Clone dust collector.

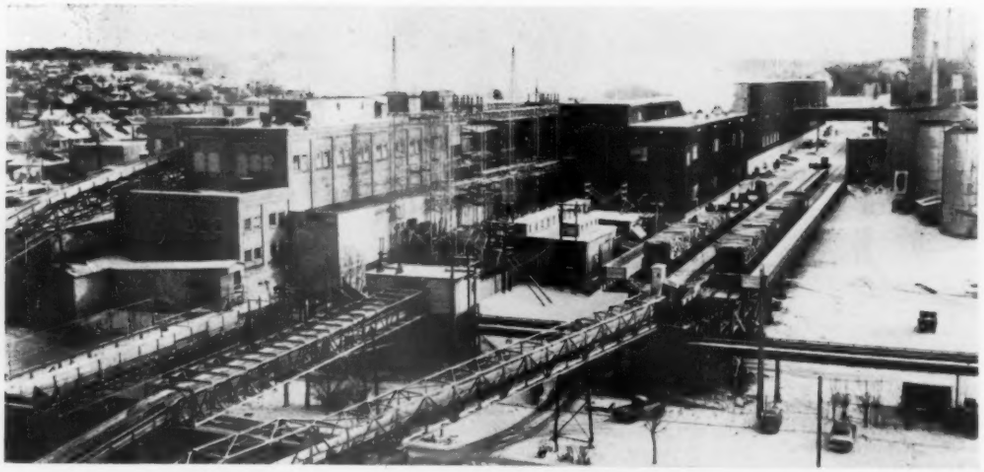
Machine Features . . .

The new machine is equipped with

Getting New No. 10 Ready



Lifting Calender Roll into Place



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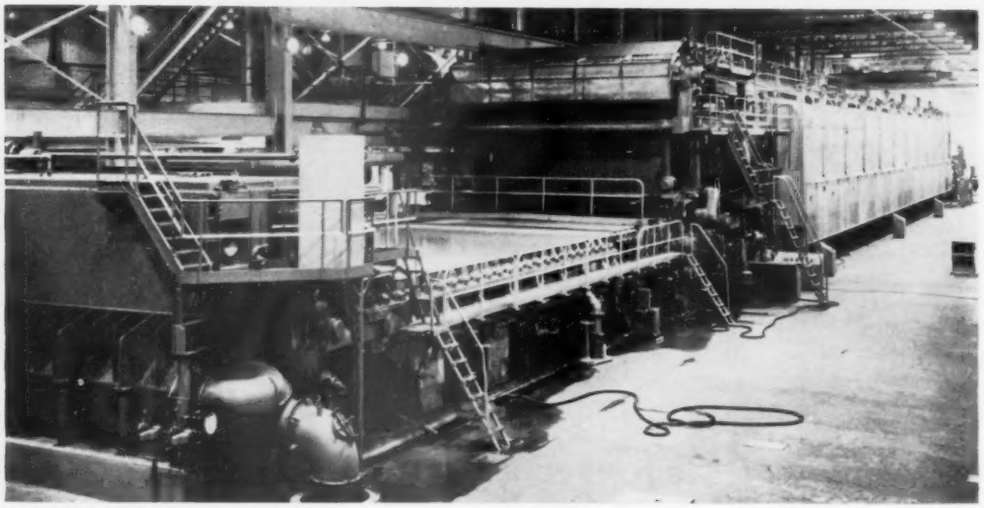

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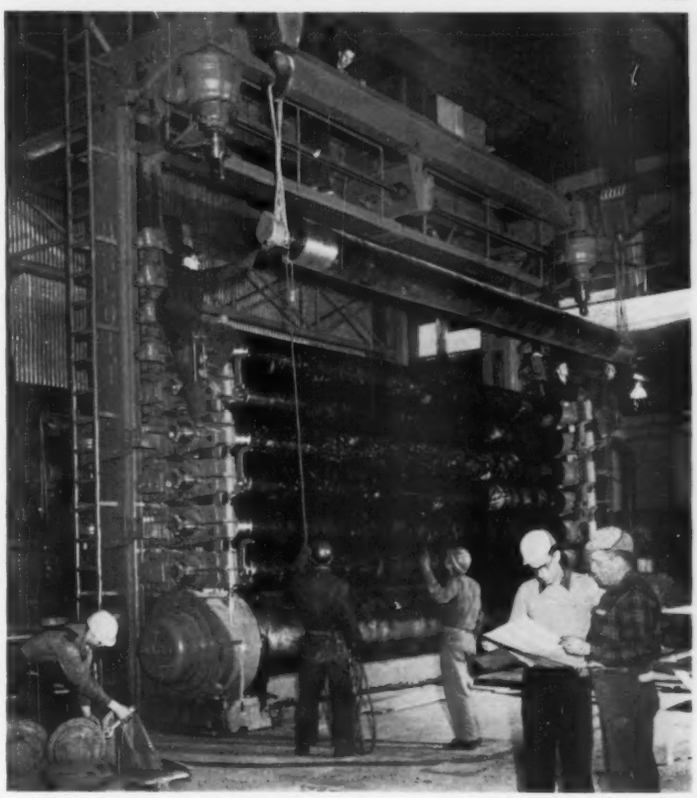

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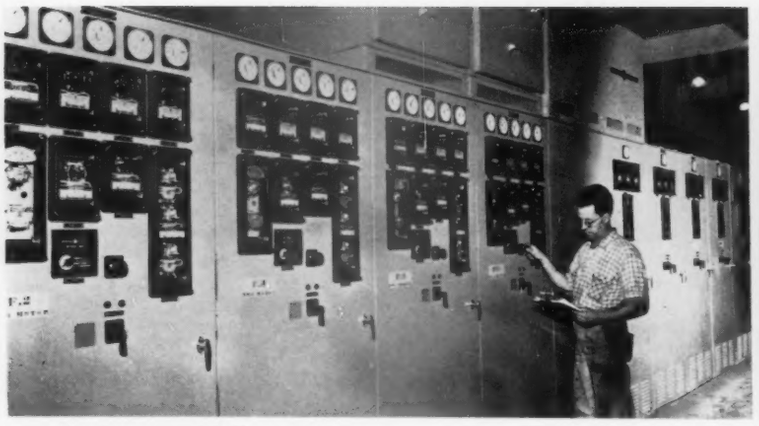


For No. 10 . . . GE Control System

Four Lines of These Grinders

a battery of Black-Clawson Selectifier screens, that need very little attention while operating. One mixing pump is all that is required to supply the pressure head box and inlet.

The press section embodies a vacuum transfer unit and has a 48-in. granite roll and Stonite roll, 47 in. in diameter, plus three suction presses, 44 in. in diameter. The sheet moves over 55 dryers. There are 11 felt dryers. The dryer section is all enclosed upstairs and in the basement with a Ross Hooper aluminum hood, which works automatically. All ventilating was by Ross, and Ross-Midwest Fulton drainage is provided. Roots-Connersville provided vacuum pumps.

The calender stack is of the open side single frame type. The king roll weighs 51 tons. Three full, 40-in. diameter rolls can be made on the reel, eliminating the necessity of constant reel changing. The winder is of the latest design, including Beloit's air tension device for unwinding over the winder. It is designed for 6,600 fpm. The paper machine is driven with a General Electric section electric drive. An elaborate roll handling system in finishing and shipping is designed and equipped by Lamb-Grays Harbor Co. A new roll grinder is by Farrel-Birmingham.

Head M&O Kenora Staff

E. O. WOOD (left) is resident engineer and E. S. ANDERSON (right) is paper mill general supt. at Kenora mill.

Instrumentation is by Minneapolis-Honeywell and Bailey Meter.

In the wood room, a new jack ladder, new slasher table, additional Tyler de-watering screen, new 66-in. saws and a fifth Weldrum barking drum were added.

Under supervision of H. A. Simons Ltd., project engineers, and the Paul A. Laurence Co., Minneapolis, Minn., a crew of 400 completed construction and installation in 19 months.

M & O Shareholders See Kenora Pictures

Minnesota and Ontario Paper Co. shareholders have re-elected to their board: J. B. Faegre, chairman; Robert Faegre, president; Daniel F. Bull, Minneapolis; C. Gordon Cockshutt, Brantford, Ont.; Thomas M. Crosby, Minneapolis; Thomas L. Daniels, St. Paul; Charles S. Garland, Baltimore, Md.; Bruce B. Dayton, Minneapolis; Serge Semenenko, Boston; Harold W. Sweatt, Minneapolis; and Robert S. Waldie, Toronto.

A special feature of this year's annual meeting was an audio-visual presentation of Mando's $20,000,000 expansion project at Kenora, Ont., which came into commercial production on Jan. 29, after 20 months of construction and nearly 5½ years of intensive planning.

Records Set By Mills

Paper and market pulp production for all Mando mills totaled 329,463 tons in 1956 some 14,713 tons over 1955. New daily production records were set at all mills during 1956, and for the year, the three machines at International Falls averaged 252 tons a day, the three machines at Fort Frances, Ont., averaged 396 tons a day and the two machines at the Kenora mill averaged 390 tons a day.

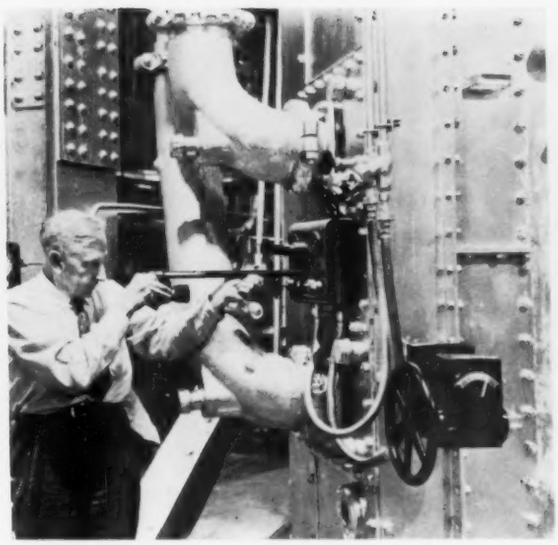
The four-machine Insulite mill at International Falls produced 193,645 tons of Insulite, an increase of 12,392 tons over 1955, including a surplus inventory of 10,940 tons at the end of the year.

New Boiler and Turbine Go to Work

• During the past ten years the Minnesota and Ontario Paper Co. has spent over $66,000,000 on a capital improvement program at all plant locations. The firm took a giant step recently when a new Combustion Engineering high pressure boiler and General Electric 6200 kw topping turbine were put into operation at their specialty paper and fiberboard mill in International Falls, Minn. Even the town will benefit, according to General Manager W. H. Schlafge; besides providing process steam and electrical power for the mill, the installation will also supply power to International Falls.

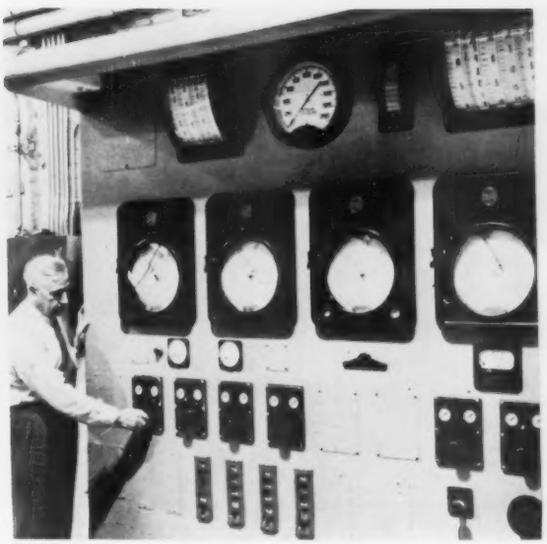
The single-pass utility type boiler and auxiliary equipment add 240,000 lbs. of steam an hour at 1,290 lbs. pressure, to existing steam generating capacity of 720,000 lbs. an hour at 425 lbs. pressure. It uses 775,000 gal. of water daily and has an effective heating surface of 22,500 sq. ft. The boiler stack is 125 ft. high with an inside diameter of 8 ft.

A 14,000 cu. ft. furnace, equipped to burn lignite, gas, fuel oil and other fuels, provides heat for the mammoth boiler. Solid fuel is pulverized and blown into the furnace at the corners, tangentially. It burns coal at a rate of 12.5 tons per hour. The fuel burned



Starting Up

A. S. Oliver, M & O supt. of steam and power, starts up the new multimillion dollar C. E. boiler.



Is Fully Instrumented

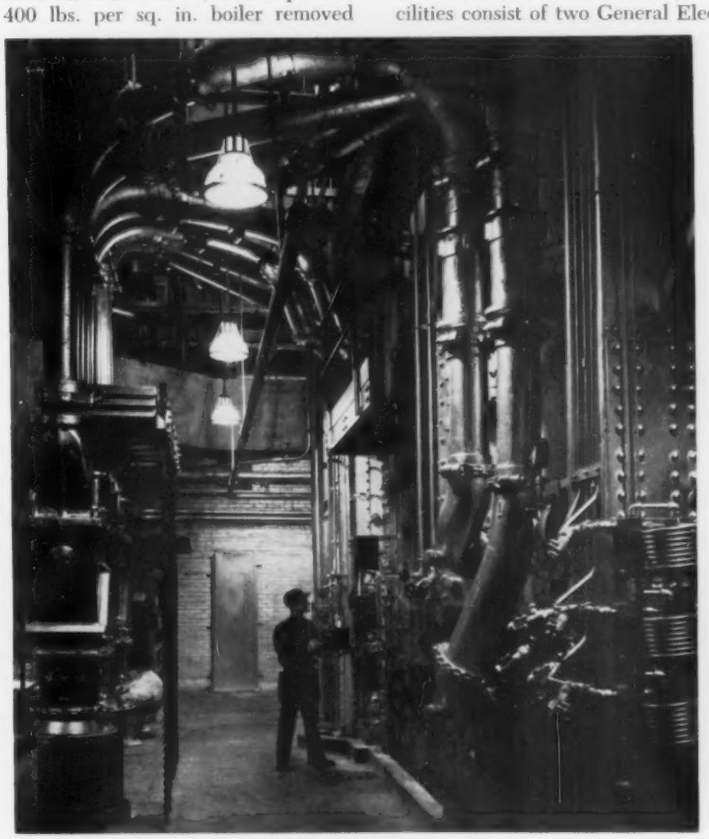
Mr. Oliver checks Bailey Meter instrument panel for new boiler.

in the boiler in one year is expected to cost more than the installed cost of the boiler. That was no small item, as the boiler building had to be raised some 52 ft. and an 80,000 lbs. per hr., 400 lbs. per sq. in. boiler removed from the boiler room to make way for the installation.

The Mando mill now has a total steam electric capacity of about 30,000 kw. With the new turbine, the facilities consist of two General Electric 4,000 kw process turbines with steam throttle conditions of 425 lbs./sq. in., 580° F. total temperature, and with extractions at 165 lbs./sq. in., 400° total temp., and back pressures at 35 lbs./sq. in.; two General Electric 7,500 kw double extraction condensing turbines with steam throttle conditions and extractions similar to those on the 4,000 kw units; and the new topping turbine with steam throttle conditions at 1290 lbs./sq. in. 800° total temp., exhausting at 425 lbs./sq. in., 580° total temp.

Existing steam generating units consist of four Heine boilers at 80,000 lbs./hr. each, 450 lbs./sq. in., 580° total temp.; one Combustion Engineering boiler at 80,000 lbs./hr., 450 lbs./sq. in., 580° total temp.; one Combustion Engineering boiler at 150,000 lbs./hr., 450 lbs./sq. in., 580° total temp.; one Combustion Engineering kraft recovery boiler at 80,000 lbs./hr., 450 lbs./sq. in., 580° total temp.; one Babcock and Wilcox kraft recovery boiler at 60,000 lbs./hr., 450 lbs./sq. in., 580° total temp.; one Badenhausen waste wood boiler at 450 lbs./sq. in. 580° total temp.

Supplementary electric power is obtained from an extensive hydro installation.



Delivers Much Needed Added Power

LESLIE PARKER, International Falls steam engineer, is checking on mill's new 10 story high boiler which burns pulverized coal for primary fuel.

Gives Scholarship to WMU

The Hubinger Co., Keokuk, Ia., has given to Western Michigan University a $500 scholarship for use of students in WMU's department of paper technology, announces J. E. Boyle, Hubinger director of technical sales service.

Management know-how is important . . .

Left to right: C. W. GALLUP, asst. to pres. and director of purchasing; MARSHAL M. H. DANA (back to camera), mgr. of sales; A. G. "GUS" PAINE, vice pres. and secy.; PETER S. PAINE, president; EDWIN O. EHRHART, (standing) president, Armstrong Forest Co.; H. S. OLIVER, vice pres. and treas.; VINCENT M. STOUCK, vice pres. and gen. mgr.

So, too, are modern plant and equipment facilities . . .

Lock Haven division of New York and Penn. in Central Pennsylvania near heavily wooded Allegheny forests. Castanea mill (right) makes 200 tons a day of supercalendered magazine papers on four paper machines; Lock Haven mill (left) has 7 paper machines; daily output of 300 tons of machine coated, super and book grades; writing and specialty papers.

Economic Engineering is Key Ingredient

How production efficiency of New York and Penn's Lock Haven Div. increases by attention to "the little things"

• Small mill flexibility, coupled with large mill efficiency and economy, reflects a high degree of economic engineering at the mills of New York & Pennsylvania Co.., Inc. It also mirrors sound teamwork between production and sales management.

A recent example: When the company decided to install a new Fourdrinier, the big problem was width. The company had to answer the question of optimum machine size for

high output and flexibility that would be in line with both present and future needs of printers.

Sales Manager Marshal M. H. Dana came up with one answer. He queried manufacturers of offset printing presses as well as leading printers about expected trends in press sizes. He found that the maximum optimum sheet size is expected to stabilize for some time at not more than 53-in.

Next, sales and production men tackled this problem: in what multiples of the 53-in. size should the new machine be made. While the trend is toward larger machines, New York and Penn men reasoned that productivity is gained only by sacrificing flexibility. Big machines necessitate large "making" orders. With a smaller machine, changeover from grades or orders can be made quickly.

Another big plus factor of the smaller machine, they calculated, is that it puts a company in a good position to roll more easily with the economic ups and downs. A smaller machine would also mean lower capital investment, freeing money for other mill improvements.

The final decision was a 108-in. Beloit with a 100,000 lb. per day capacity, big enough to operate "stocking" orders, but still flexible enough to profitably produce small "making" orders. Further versatility was insured by adding a Beloit tub press for surface sized paper. This machine has now been installed and scheduled for start-up momentarily at the Lock Haven mill.

Useful Ideas and Practices at Lock Haven

PULP & PAPER's Eastern Editor, Maurice R. Castagne, found plenty of useful ideas and improvements in operation in a recent tour of the Lock Haven and the Johnsonburg mills in Pennslyvania of the 67-year-old New York & Pennsylvania Co., Inc.

Those observed at the Lock Haven mill are presented here as a series of stories for quick reading and selection by PULP & PAPER's readers. What he tells is this:

- **"Engineering in action" as the company decided on what it wanted in the way of a new Fourdrinier machine.**
- **A continuous stock preparation system at Lock Haven with unusual features—a pioneering installation.**
- **Five tests for coating clays. In this section, also, facts about a giant pilot coater.**
- **How coating clays are prepared for high quality magazines such as Holiday (100% coated), Ladies Home Journal (50% coated), Saturday Evening Post (cover only) and others.**
- **How flotation savealls allow for greater flexibility in changing grades and save floor space.**
- **Some unusual tests and interesting equipment for quality controls of book paper.**
- **A "How-To-Do-It Section"—ideas for stock consistency systems, integrating supercalenders, materials testing, Centri-Cleaners, gadgets for effluent, overloading indicator, protection of motors . . .**

Mr. Castagne's article on the Johnsonburg mill appeared in PULP & PAPER's April issue, beginning on page 54. It told of complex mill waste handling, a highly automated stock system there, raw water treatment, improved acid preparation and some records on pulp cleaning.

Unusual Features for Stock Preparation

● One of the first continuous stock preparation systems in the country has been in operation at the Lock Haven, Pa., mill of New York and Penn since 1951. It has been improved. Present features: Individual treatment of each of five principal fibers (sulfite, kraft, semi-chemical, soda and deinked) which are used on four machines. In addition, it affords improved uniformity of proportioning in desired amounts with better control to each machine.

Major control of stock flow is centered in one control point equipped with Minneapolis-Honeywell instruments and is manned by one stock mixer. The stock mixer's main job is to observe and control the stock flow by communicating with the other points in the system. The entire stock supply for Nos. 1, 3, 7 and 8 paper machines is provided with a production potential greater than the present 250 tons a day and with only eight men per tour.

Equipment consists principally of 40 tanks and chests which have a combined capacity of some 900,000 gals. Piping is stainless steel—copper or rubber lined (American Hard Rubber and U.S. Rubber). Spiroweld piping is also used for smooth surface and cleanliness. Pittsburgh Piping Co. was the fabricator. The stock proportioning equipment is of New York and Penn design and developement.

Flow of Operation . . .

Stock preparation begins at two 20-ft. Shartle Bros. Hydrapulpers. Each takes a 6,000 lb. charge with about 15,000 gals. of water. Each is driven by a General Electric 300 hp motor.

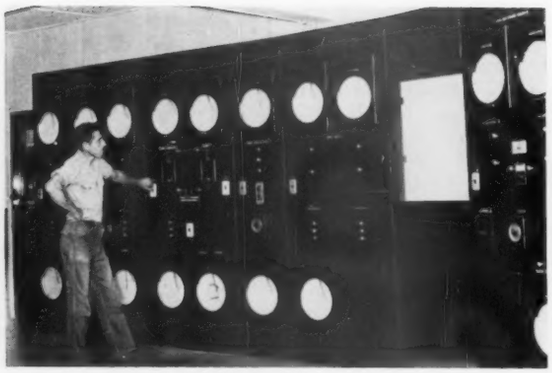
Sulfite is pulped exclusively in one Hydrapulper; soda and kraft alternately in the other. Minimum defibering time is 15 mins.; normal cycle is about 30 mins. The two Hydrapulpers do the work of 15 or 16 beaters, which would need one man at the controls of each, says Tom Williams, assistant supt. of the Lock Haven mill.

Either Hydrapulper can supply the entire stock system if necessary. Of the water charge 80% is for defibering, the rest is for flushing the defibered pulp from the Hydrapulper.

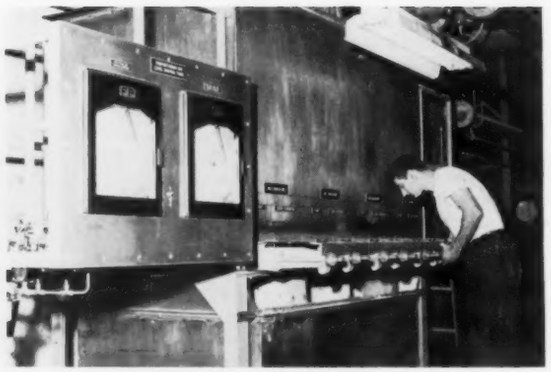
From an adjoining pulp storage warehouse, or directly from railroad cars, pulp for the Hydrapulpers is loaded onto pallets (68 by 96 in.) which are hoisted by a Louden mono-

In search of better ways . . .

Left to right are HARRY FOX, JR., mgr. of engineering; W. E. BYRON BAKER, mgr., paper research; HERB CHURCH, technical asst. to vice pres. and general mgr.

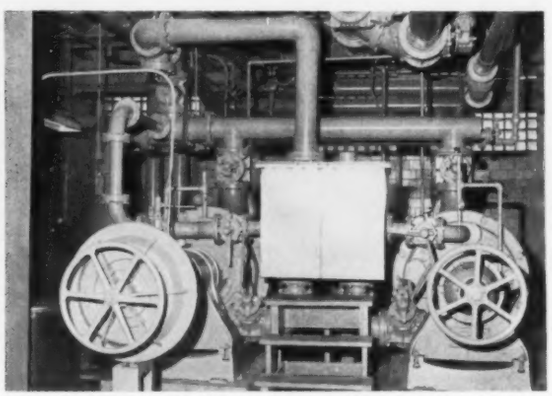


Steps in Stock Preparation . . .
Major control centers at this Minneapolis-Honeywell panel, with WILLIAM VANCE RUMMER at button.



Proportioning is done in this stainless steel box. Fischer & Porter recorders at left.

Fischer & Porter color system for four machines at Lock Haven being adjusted by NEVIN J. SWEITZER.



After blending (5 pulps, alum, size, and color) these E. D. Jones Majestic jordans do their work.

rail two-ton capacity Hevi-lift crane and then charged into the Hydrapulper. Bristol recorders time and record the cycle length, the amount of water, and totalize the cycle.

After the elapsed cycle time, the contents are dumped and flushed into a Stebbins tile-lined unrefined pulp storage chest which has the capacity of 1.5 Hydrapulpers.

From the dump chests, stock is pumped to the stock control system into storage tanks (48,000 gal. and 24,000 gal. tanks are used). All are Stebbins tile-lined and equipped with 30 hp Reliance Electric & Engineering motor-powered Impco agitators.

Samples are taken from each Hydrapulper batch by the three men who man the stock control laboratory. Kraft refining is held at about 40 to 45 secs. (Williams) freeness and sulfite at 20 to 25. Tests are also made by this lab on machine furnish for pH, freeness and consistency, and pH tests on white water. In addition, tests are taken of every batch of coating for viscosity, pH and solids.

How Pulps are Diluted . . .

Defibered sulfite pulp is channeled at 4.5% consistency through 8 in. and 10 in. pipes continuously and alternately into two 24,000-gal. capacity dilution tanks. Consistency is automatically reduced to 3.5% A.D. by the addition of water which is controlled by electrode circuits in the tanks. These electrodes actuate pumps on two 4,800-gal. sulfite dilution tanks through time delay relays. Diluted stock is then pumped to a 48,600-gal. capacity tank for final storage. The stock is channeled from here to machine proportioning boxes as needed.

The soda pulp handling and dilution system is almost identical to the sulfite system with some exceptions.

All sulfite pulp is purchased and shipped to the Hydrapulper building. It is introduced into the stock control system directly from the Hydrapulper building, while soda pulp is produced at the Lock Haven soda mill; the difference between demand and supply being made up by soda purchased from the Willsboro mill, which is defibered at the Hydrapulper, then pumped to the stock control system.

Each kind of soda pulp is handled separately and continuously, the two streams merging as they enter the two 24,000-gal. dilution tanks where consistency is adjusted to 3.5% A.D. Samples are taken at regular intervals from the individual pulp streams and tested by the stock control laboratory for consistency and freeness.

How Blending is Done . . .

All five different pulps, in steady streams, are blended in separate proportioning boxes—one for each machine. Each box has five separate compartments with identically machined, slot-type gates at the bottom. Brooke, and Fischer & Porter regulators keep constant identical pressure heads on the five gates. Gate settings are obtained from tables established for the desired proportion of each kind of stock on each machine.

The system was set up for all different pulps. Alum, size and color are blended continuously to the stock by Fischer & Porter Flowrators. The stock then courses through E. D. Jones & Sons Majestic finishing jordans and into the machine chests.

The Broke Systems . . .

Dry broke from No. 3 paper machine is repulped in a broke beater

and automatically pumped into a chest. As this becomes full, the broke is channeled ahead through a Jones high speed jordan which is powered by an Electric Machinery motor, through a DeZurik consistency regulator to a chest. Couch pit stock and Impco vacuum saveall discharge join the dry broke ahead of the regulator and enter the chest together.

The dry broke-recovered saveall solids mixture is passed through a Jones high speed refiner and then into a 12,000-gal. machine chest.

No. 1 machine dry broke is reworked in a beater and automatically pumped into a chest which also receives the discharge from a Bulkley-Dunton colloidair separator. It is refined continuously by a Jones high speed refiner and channeled into a 12,000-gal. machine chest. Couch pit stock is also orificed continuously into this chest.

Nos. 7 and 8 machines also utilize separate broke systems. Here, too, dry broke is reworked in a beater and pumped into a large chest where recovered saveall solids are added.

Broke and saveall mixture is continuously withdrawn, pumped through a high speed refiner, and a Fischer & Porter automatic flow controller into the main furnish stream joining at the finishing jordan. The mixture goes next into a machine chest and from there into the headbox.

Five Tests Made for Book Paper Clays

● New York and Penn uses some 50,000 tons every year of kaolin clay from Georgia. To insure uniformity of quality, the company has gone to unusual lengths to test this important raw material.

What New York and Penn Makes and Where

New York & Pennsylvania Co. is one of the leading book paper manufacturers in the U.S. Its five pulp mills (one sulfite, three soda, one pilot semi-chemical) produce over 400 tons a day, or 81% of company requirements. Sixteen paper machines make about 750 tons a day of machine coated papers, supercalendered magazine, book, writing and other specialty papers.

The New York and Penn organization has been producing papers since 1890 when Col. Augustus G. Paine (grandfather of the current President Peter S. Paine), a Maine man, came to Lock Haven and effected a merger with the Armstrong interests to form New York & Pennsylvania Co., Inc. Then, the mills were Lock Haven, Johnsonburg, Pa., and the pulp mill (Champlain Fibre Co.) at Willsboro, N.Y.

In 1920, the streamlined Castanea mill was built alongside the Lock Haven mill. Today, these two mills comprise the Lock Haven division.

The first shipment of paper to Curtis Publishing Co. was made during World War I. Over the years Curtis bought an increasing amount and in 1950, New York and Penn became a Curtis subsidiary.

27,000,000 Copies . . .

Curtis' massive, high-speed multicolor presses roll out more than 27 million magazines each month and require a high degree of uniformity in quality. How New York and Penn effects this quality control is told in the accompanying story.

Annual production of over 270,000 tons is 50 times that in 1890 and the company now has 10 times as many employees (1956—2600 people).

What is at the Mills . . .

The Lock Haven mill, in central Pennsylvania, is on the West Branch of the Susquehanna River, near the heavily wooded Allegheny forests. Six paper machines, all Fourdriniers, produce 300 tons a day of machine coated, super and other grades of book, writing and converting paper.

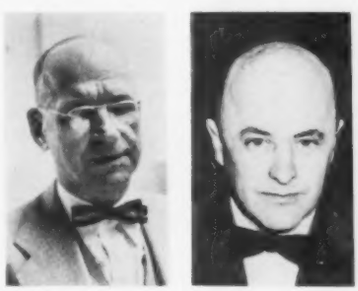
A novel feature on two Beloit machines with 138-in. trims, is that in addition to having machine coaters, supercalenders are also integrated on the machine.

Lock Haven pulping facilities include a 70-ton a day bleached soda mill, a 25-ton a day semi-chemical pilot plant and a deinking department which consumes 35 tons a day of printed waste paper.

The Castanea mill makes about 200 tons a day of supercalendered magazine papers on four Bagley & Sewall Fourdriniers. A deinking plant consumes 60 tons a day of printed waste.

Some 100 miles northwest of Lock Haven is the Johnsonburg mill. On the banks of the Clarion River, high in the Alleghenies, this mill is handy to some of the richest timberlands in the Middle Atlantic states.

This integrated mill produces 260 tons a day of supercalendered magazine paper on five Fourdriniers. Its 16-digester soda pulp mill makes 140 tons of bleached soda pulp daily and the 4-digester bleached sulfite mill about 100 tons a day. Deinking facilities consume 85 tons a day of printed waste.



At Lock Haven Div. . . .
EMIL COLQUIST (left), supt., Castanea mill and THOMAS G. WILLIAMS, recently appointed supt., Lock Haven mill.

At Johnsonburg . . .
NEAL JONES, (left), manager, Johnsonburg mill and HENRY BELL, general supt.

The Willsboro mill is located on the Bouquet River near Lake Champlain, N.Y. It has a daily production of 55 tons of bleached soda pulp which is used in the company's paper mills and sold to the general market.

A Forest Co. Subsidiary

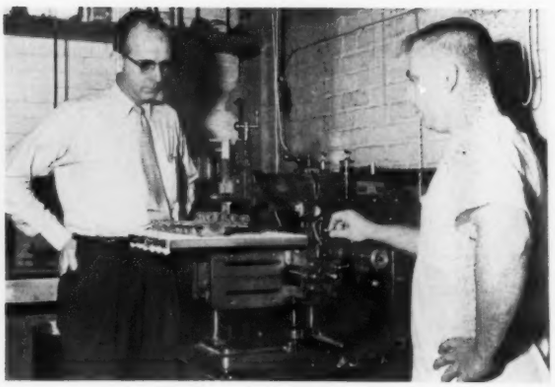
At Johnsonburg, too, is headquarters for the wholly-owned subsidiary, Armstrong Forest Co., headed by Edwin O. Ehrhart, president. From here a staff of 60 directs pulpwood operations in 200,000 acres of timberlands in the U.S. and Canada, in addition to the purchase of local grown pulpwood amounting to half a million dollars annually for the company's mills.

New York and Penn uses about 500,000 tons of coal a year, half of it mined at its own open-strip mine near the Lock Haven mills.

In 20 years New York and Penn has spent some $5,000,000 on the treatment of effluent from its mills. Annual requirements for rock salt (for making its own chlorine) are 16,000,000 lbs.

Which way is New York and Penn heading? Recently, President Paine revealed that the company's ambition is to double its general market sales within the next five years. Sales Manager Marshal Dana and his sales staff aren't saying much these days. They're too busy working.

Every Car is Tested . . .
At New York and Penn, tests are for moisture, grit, viscosity, particle size and abrasion. Here 100-lb. bag is filled with filler clay for testing.



Abrasion is Problem . . .
Atlas shaper is modified for abrasion test by fastening an arm with 7 fingers to the ram. WILLIAM WENDELL (left), coating tech., and ALLEN BARRETT, lab asst., check operation.

There are two major types of clay used in paper making: Filler clay and coating clay. Filler clay is used primarily to impart opacity and smoothness to the paper. This is especially important in printing papers of the quality made by New York and Penn.

At New York and Penn's Castanea mill in Lock Haven, Pa., PULP & PAPER visited the coating laboratory where experimental work is performed on new materials and new coating techniques are developed. Also, all the filler and coating clays received at the three mills are examined and tested for quality.

These five tests are made on each car of clay received:

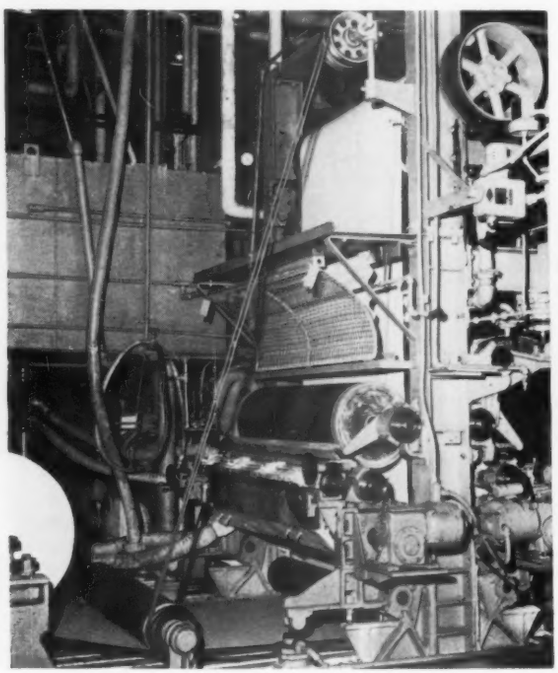
1. Moisture—moisture content is important not only because of freight costs but because high moisture content clays are very difficult to unload with an Airveyor system.

2. Grit—a grit or screen test tells something of the cleanliness of the clay and also can be indicative—but not always so—of abrasiveness.

3. Viscosity—important in determining the handling of high solids slurries.

4. Particle size—this is done by a rapid centrifugal method and is used primarily as a control for uniformity and quality.

5. Abrasion—a problem not only for the paper mill because of wear on pumps, Fourdrinier wires, suction boxes, cutters and trimmers but also because of wear of the printing plates of their customers.



"Experimental" Coater . . .
This 52-in. coater, big enough for commercial use, has many advantages for New York and Penn. It can take 50-in. wide rolls, up to 35-in. dia., and duplicate process of on-machine coaters.

How Tests are Made

As the filler clay cars are unloaded, samples are taken from the various parts of the car and a composite sample is made. Approximately 100 lbs. of clay is taken from each car and after repeated quartering, a 5-lb. sample is used for testing and filing.

The moisture test follows the standard TAPPI method of oven drying and also a rapid test using a high speed moisture teller.

The grit or screen test is made by slurrying a known quantity of clay at 60% solids for 30 mins. and screening it through a 325 mesh screen. The residue is dried and reported as the percent retained.

The viscosity test is made by completely dispersing filler clays at 65% solids and coating clays at 72% solids, and then checking the viscosity with a special Brookfield Viscometer. This rotating viscometer is used to measure viscosities at 10, 20, 50, and 100 rpm's and the information is recorded as such.

The particle size test is a control test and is used by measuring the quantity of clay thrown out of suspension by centrifugal force in specified periods of time.

The clay is dispersed in a suspension of 4% solids. The centrifuge was specially built by Georgia Kaolin Co. and is driven by a $\frac{1}{12}$ hp motor at 530 rpm. The total time required for the centrifuging is 10 mins. but the quantity thrown out is recorded at 1, 2, 3, and 10 mins. This is a relative test but is very good for control.

New York and Penn feels that one of the most important tests is the abrasion test and this is reportedly one of the few companies checking every car of clay for this property. Here is how it is done:

An abrasion tester was made by modifying a 7-in. Atlas shaper. To the

ram has been fastened an arm having 6 fingers. To each finger is attached a floating, weighed copper plate to which is attached a definite weight. The copper plates are stroked against a felt which has been impregnated with the clay under test and prepared as described below. At certain definite times additional clay mix is added to the felt to make the test more severe. After 40,000 strokes of the copper plate against the clay impregnated strips, the plates are cleaned and re-weighed. The loss in weight is taken as the abrasiveness. Six clays can be tested at one time, which requires about 6 hours.

The clay mix is made by mixing thoroughly in an ink mill a mixture of 50% clay and 50% varnish. The mix is passed through the rollers five times for thorough mixing. The rollers are not set close enough to give any grinding of the material causing the abrasion.

Use of Experimental Coater

Of prime interest in the coating laboratory is the 52-in. experimental coater. Many mills would consider this unit to be commercial but to New York and Penn it has many other advantages.

This unit can take 50-in. wide rolls as great as 35-in. dia. and duplicate the process of their commercial on-machine coaters. Either side—one at a time—or both sides at once can be coated with an offset-gravure type coater at speeds up to 1000 fpm.

This coated roll can be supered in the mill on a conventional calender and then shipped to printing plants for commercial printing. This experimental plant also has a complete coating color preparation unit.

This equipment allows New York and Penn to study technical problems concerning its coaters such as knurled roll design, rubber roll composition and hardness, and mixing and screening equipment. By using this equipment the research department can also study the standard problems of coating color formulations, adhesives, pigments, accessory materials, drying, coat weight, etc.

How Coating Clays are Prepared

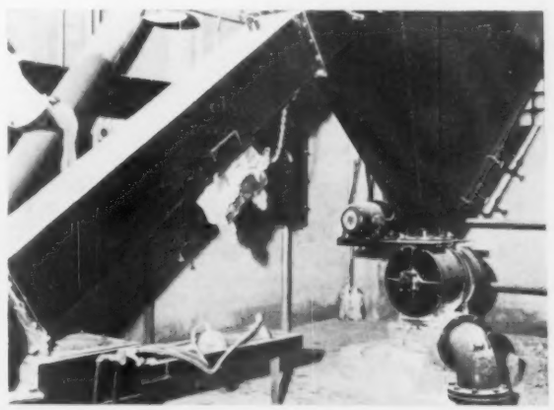
● New York and Penn uses some 55 tons a day of coating clays in its coated papers at its Lock Haven, Pa., mill.

A Fuller Airveyor system moves coating clays from railroad cars through a 150-ft. long pipe-run to the Transite shed housing three clay silos. Each silo holds about 900,000 lbs. each or the equivalent of 11 railroad cars.

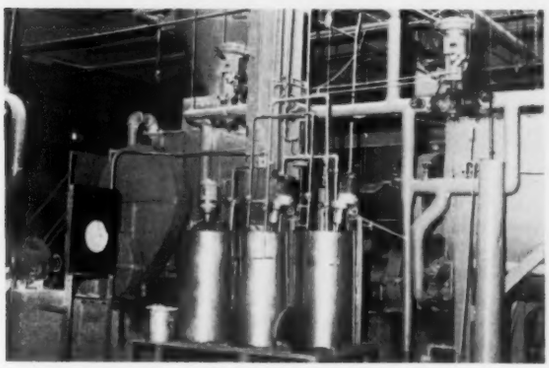
Clay moves from the silos into a 33,000-lb. supply tank equipped with a Syntron shaker. From there it goes into a scaled chest where it is weighed. Starch (converted dextrine) is fed into one of two Devine starch cookers for a 50 min. cooking period up to 200° F. The cookers are agitated by 25 hp Reliance 1760 rpm motors with Falk reducers.

After cooking, the clay is mixed with water and starch in a Readco Z-blade type mixer for 30 min. and the coating preparation then moves to storage. Storage tanks have 850 gal.

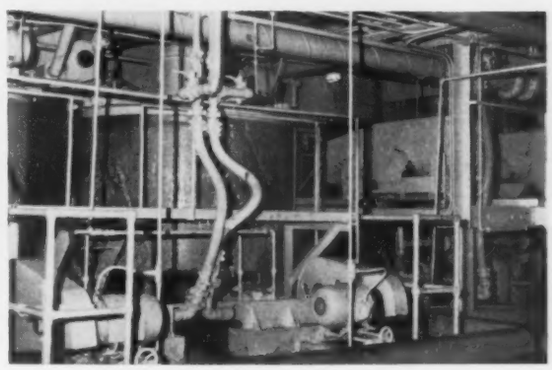
Flow of Clay at Lock Haven . . .
Transite shed houses three clay silos. Each holds about 900,000 lbs. or about 11 cars.



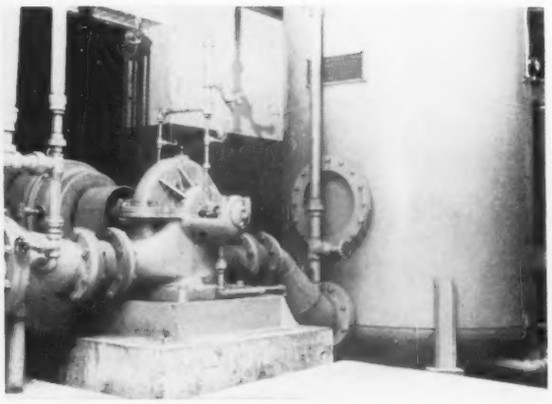
Clay flows into 33,000-lb. supply tank aided by Syntron shaker, then drops to scaled chest for weighing.



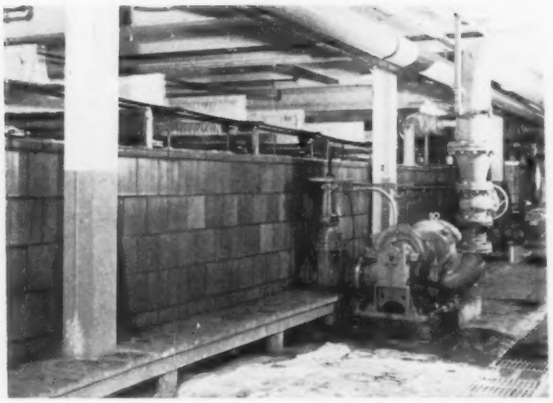
Starch is fed into one of two Devine starch cookers for 50-min. cook, and then mixed with clay and water.



Storage tanks for coating preparation have 850-gal. capacity, each. There are three.

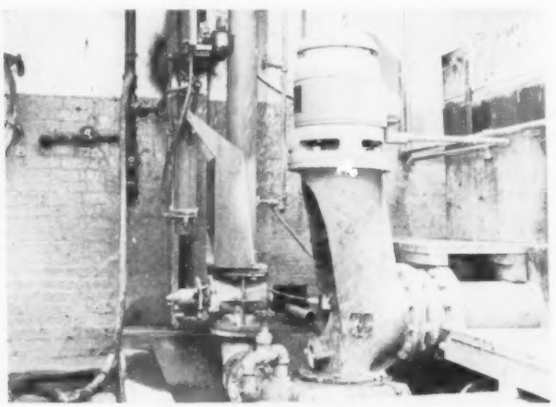


How Saveall System Works . . .
White water from paper machines moves through Goulds pump into retention tank. Atmospheric air is drawn through injector system on suction side of pump.



One of six Bulkley, Dunton flotation savealls at Lock Haven. Flotation action occurs over entire area, results in continuous layer of solid material.

Flight skimmers continuously collect concentrated solids, deposit them into float-discharge ramp. Solids recovery is reportedly 95% and better.



Recovered solids are pumped through this Shartle Miami centrifugal pump to a recovery chest, combined with paper machine broke, and fed back into system.

capacity; circulation is provided by Moyno pumps (worm rotor with a rubber worm-shaped shell).

The Readco mixers have Link-Belt chain drives driven by a 100 hp Continental or Reliance motor.

Improved Operation with Six Savealls

• Improved flexibility in grade changeover has been effected at New York and Penn's Lock Haven mill by installation of six Bulkley-Dunton flotation type savealls.

Other advantages: grade changes on the machine and change of stock through the savealls are more rapid; white water is improved, and the new units occupy less space (4 to 5 times less) than previous sedimentation-type units; solids recovery is reportedly 95% and better.

Principle of operation of the B-D saveall is the use of dissolved air flotation to separate the fibers and fillers from the water. Air is dissolved under pressure in the white water and released when the flow reaches the flotation chamber of the unit. Tiny air bubbles are created, attach onto the fibers and lift them to the surface of the tank where they are scraped off into a recovery chamber. Each of the six is a self-contained package.

Size of the units are: Two, 1,200 gpm, two, 1,000 gpm, one, 800 gpm, and one, 1,500 gpm. Each unit is Stebbins tile-lined.

White water from the paper machines is fed by gravity or by Goulds 40 hp pumps to a saveall collection box. A Minneapolis-Honeywell regulator controls the collection box level so that the pump doesn't lose suction. White water is then channeled to the B-D absorption tank or colloidair separator for mixing with air. A Mason-Neilan throttling valve in the saveall maintains a constant head (80 psi) against the absorption tank.

Flocculating chemicals (Dow Separan and regular resin size) are added on the low pressure side of the valve. The air-water solution flows into the flotation unit and the matter is flocculated with the bubbles trapped inside. Solids are forced to the top and skimmed off by traveling paddles that deposit it into a collection chamber at the discharge end. Paddles are driven by variable speed ¾ hp U.S. Electrical motors. Rate of flow of flocculating chemicals and air is controlled by Fischer & Porter Flowrators.

Cleaned white water is picked up from the bottom of the tank through a tapered pipe with holes along its length and sumped into the collection trough.

Solids reclaimed at the saveall are combined with broke return from the machine in a chest and are fed back into the system.

Shartle Bros. centrifugal 150 gpm, 1.16 rpm, 13 hp, 95 ft. head pumps are used to return the reclaimed saveall solids to the system.

How Quality is Controlled . . .
Foxboro sheet profiler for basis weight indication (cost $6,000) works as well as more expensive units, says company.

Colorimeter, at cost of $1,200, gives an arithmetical figure for color variations.

How N.Y. and Penn Tests Book Paper

● Engineering the modern magazines for Curtis Publishing Co. makes exacting demands upon the quality of magazine papers produced at New York and Penn. Here's how it's solved at the Castanea mill at Lock Haven (Pa.) division.

A new Foxboro beta-ray sheet weight profiler has markedly reduced basis weight variations and saved considerable time. Quality Control Supervisor Chester McLaughlin says the profiler is one of their best testing instruments. An additional unit has been installed at each of the other two mills.

"It used to take 15 minutes to check a reel's weigh sample," he explained, adding, "Now we feed a reel-width sample through and it gives continuous measurement in about one-third the time."

First installed in April 1955, the unit measures basis weight variations by passing a stream of beta-rays through a sample of paper. A sensing unit measures the amount of radioactive material that passes through the sheet and electronically translates this data into percentage figures on a moving chart recorder.

Variations are reported to machine-tenders who make whatever slice adjustments are necessary.

For control of color, New York and Penn uses a Colorimeter, a table unit designed originally by DuPont to match paint colors. It gives a numerical value for colors with the aid of three color filters: red, green and blue.

The Colorimeter is made by Manufacturers Engineering & Equipment Corp., and sells for around $1,300. One of the industry's largest magazine producers recently assigned two ph.d's. to evaluate this unit; later installed several.

New York and Penn also uses a Bausch & Laumb Opacimeter to determine ink penetration on a sheet. Supervisor McLaughlin also says that their 17 x 22 Claybourn Precision flatbed press shows up defects that no other test will. A twin unit is located at Curtis in Philadelphia so that identical tests can be made and compared.

Lots of Ideas—From New York and Penn

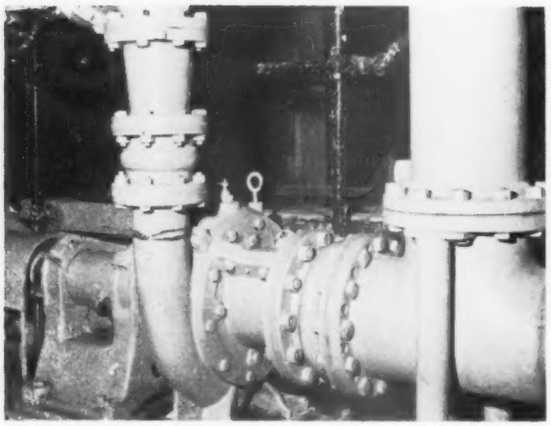
● Economic engineering—the efficacious and most judicious use of equipment for maximum efficiency—reveals a high degree of inventive talent at New York and Penn—and company spirit.

Here are a few examples:

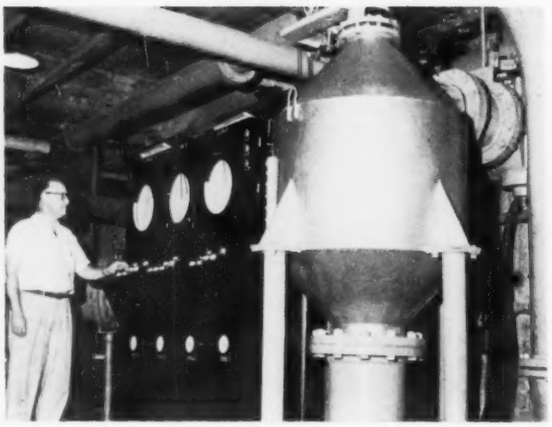
Ideas for a Stock System . . .

When the Castanea (Pa.) mill revamped its deinked stock consistency system, Lock Haven Division Engineer Hubert Parker faced the problem of drawing the 3.5% consistency stock from storage chests through a

Economic Engineering in Action . . .
HUBERT PARKER, Lock Haven Div. engineer, touches standpipe, part of unusual installation on bleached deinked stock consistency system.



Here Was a Poser . . .
Problem: How to draw 5.5% consistency stock 65 ft. from storage chests. Solution: Nash Hytor vacuum pump on standpipe (vertical pipe at right) creates 22-in. vacuum which pulls stock to eye of Warren centrifugal pump. Valve by Crane; flexible rubber coupling by U.S. Rubber.



Deinked and Bleached . . .
Stock (72 to 76 GE brightness) moves through Nash Hytor-Warren installation into Stebbins-tiled consistency chest. DeZurik regulator (foreground) has sensing unit in bypass of chests to regulate stock consistency. At left, MILLER SHOENFELT, supervisor of stock preparation, checks M-H controls.

maximum of 65 ft. of horizontal pipe with a 2-ft. rise at the suction point of a single suction horizontal centrifugal pump.

After he talked over the problem with Jack G. Rearick, chief engineer of Warren Steam Pump Co., Inc. (now retired), here's what New York and Penn did.

Immediately ahead of the suction of a Warren centrifugal stock pump, they created a 22 in. vacuum with a Nash Hytor vacuum pump which pulls the stock up to the eye of the pump. To the best of Mr. Parker's knowledge, this is the first time stock of this nature has been pulled to the eye of a centrifugal pump. Results were successful.

Actually, the new deinked stock consistency system merits more than passing mention. Deinked and bleached stock (72 to 76 GE brightness) is pumped to one of 12 chests for storage. From here, it is drawn by the Nash Hytor-Warren pump installation into one of two Stebbins-tiled consistency chests.

A DeZurik regulator, set in a bypass to the chests, actually senses a portion of the stock before it is moved by another Warren pump to the beaters.

Another interesting installation on this system and one used frequently throughout New York and Penn mills is rubber flexible expansion coupling (Goodyear, Goodall and U.S. Rubber). Their prime value, reports Mr. Parker, is to eliminate vibration and strains between pump and pipe.

Integrating Supercalenders . . .

"Chick" Flaig, paper machines general foreman, when asked for ideas, told P&P about the integrating of supercalenders on two Beloit Fourdrinier paper machines at Lock Haven. Reason: Saving in labor and space, but most important you know right away whether the paper is satisfactory from a smoothness and finish standpoint.

In materials testing at Castanea, a model 7B Atlas Shaper is used as a device to determine the abrasiveness of filler and coating clays.

Ideas for Centri-Cleaners . . .

To prevent air from being pulled into the cones on the Centri-Cleaner installation at the Johnsonburg mill, New York and Penn engineers had the reject nozzle hooked into a 6-in. stainless steel reject manifold, under 10-in. mercury vacuum. Visual checking by Plexiglas couplings on the cones is another mill engineer's idea.

Gadget for Effluent System . . .

Also at Johnsonburg, Technical Director Harold Knapp contrived a warning device on the sulfite effluent lagoon system consisting of a series of relays which tell when there is an equipment failure. If a pump fails or the power goes off, a special signal tells the operator at the waste treatment plant what is wrong and gives the warning in ample time for the operator to get down (1.25 miles away) to the lagoon.

In the meantime, the operator will notify the mill to stop the flow of sulfite liquor to the lagoon.

Torque-Overloading Indicator . . .

Mr. Knapp also has installed a torque-overloading indicating instrument in the Infilco Cyclator un't which enables operators to prevent excessive accumulation of sludge in the portion of the unit which would stall the scraper mechanism.

Protecting Motors . . .

To cut down replacement and maintenance costs arising from unusual moisture problems inherent in any paper mill, C. R. "Bob" Martin, assistant maintenance engineer, reports the installation of all-metal infra-red heaters on motors. About 80 motors are so protected at Johnsonburg.

At first, infra-red lamps were used, but replacing burned-out lamps and breakage due to moisture drippings made this method uneconomical.

Says Mr. Martin, "The radiant heaters save replacing of motors, save time and labor and eliminate grounded motors." He adds that they do not have to check out motors after a week end or other shut-down, even in critical locations where Eme or dust collects moisture rapidly.

Esco Purchases 22,000,000 Volt X-Ray Machine

One of only three such commercial installations in the U.S., a 22 million volt Betatron has been installed by Electric Steel Foundary Co. for its Portland, Ore., plant, and will be operated under the supervision of the Metallurgical Labortary. The Betatron, Model RT122, purchased from Allis-Chalmers, will complement the company's present 220,000 volt X-ray and Cobalt 60 radiographic facilities.

This Betatron will be the first industrial unit with ceiling mounted, telescoping-tube suspension which will rotate vertically and horizontally. Esco will now be able, through the Betatron, to produce radiographs of metal sections up to 20-in. thick.

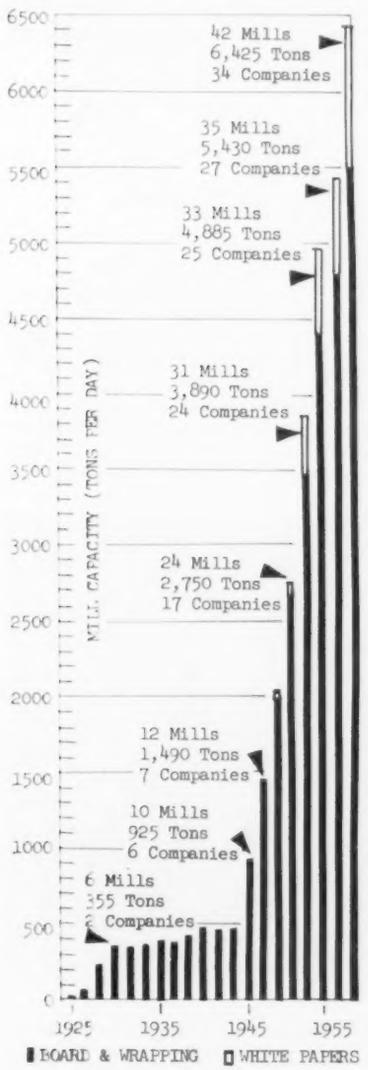
A Fresh Look at Semi-Chemical Pulping

● Few people would have dared to predict in 1925 that neutral sulfite semi-chemical pulping would have made such a phenomenal growth. That was the year that the Southern Extract Co. (Mead Corp.) began the semi-chemical industry, producing pulp from chestnut trees.

But it wasn't until 1944-1945 that the industry really got started, when a Southern kraft mill began to produce 200 to 300 tons a day.

A new survey reveals that semi-chemical pulping will soar from an estimated 1956 capacity of 1,948,000 tons to around 2,600,000 by 1959.

The Department of Commerce reports that U.S. consumption of semi-chemical pulp was around 1,138,112 tons in 1954. Biggest regional consumer was the South with 650,994 tons. Second was the North Central with 343,016 tons; next came the Northeast with 98,956 tons and the West with 57,586 tons.



U.S. Semi-Chemical Pulp Capacity 1925-1957

The major consumer of semi-chemical pulp was containerboard which took about 943,000 tons; hardboard and insulating board took 55,412 tons; paper machine coated paper consumed 35,494 tons; book paper, 21,426 tons; fine papers, 17,357 and coarse and special industry papers, 10,942 tons.

Semi-chemical pulp mills consumed some 1,353,257 cords in 1954; of which about 1,201,000 cords were hardwoods. About 25% of all hardwoods used were for semi-chemical pulping.

Also interesting is the growth comparison in tons and dollar value of semi-chemical pulp between 1947 and 1954. Some 1,197,984 tons were produced in 1954 with a value of 71,359,000 compared with 444,033 tons in 1947 and a value of $16,742,000 tons.

What are the reasons behind this tremendous growth? Why the switch to the NSSC process? The one man who should know these answers is John N. McGovern, Parson & Whittemore, Inc. His friends call him "Mr. Semi-Chemical." Here's what he told a recent meeting of the Metropolitan District of TAPPI in New York City:

Q. What is semi-chemical pulping?

A. A multistage pulping process involving chemical treatment of a fibrous raw material to obtain a softening and/or partial removal of the bonding material, followed by mechanical treatment to complete the fiber separation.

Q. What motivated semi-chemical development?

A. Mainly, (a) to utilize available hardwoods and (b) to obtain higher yields of pulps having chemical pulp uses.

Q. What semi-chemical pulp grades are made and what is their distribution?

A. Semi-chemical pulps are still chiefly corrugating grade, with increasing amounts of unbleached and bleachable grades for specialty boards, including foodboards, and a variety of papers. Corrugating grade capacity was 100% of semi-chemical pulp in 1947, 95% in 1949, 88% in 1953, and estimated 81% in 1957. The trend is to paper grades.

Q. When was the first mill established?

A. In 1932, Southern Extract Co., Knoxville, Tenn. First bleached semi-chemical, 1949, at Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis.

Bright Future for Semi-chem...
Smile reflects thinking of JOHN N. McGOVERN (right), Parson & Whittemore, ("Mr. Semi-Chemical") as he warms to future outlook for NSSC pulping. Equally optimistic listener is ED HUDSON, Lowe Paper Co. Photo by P&P.

Q. How much semi-chemical pulp is made?

A. In 1955, production was 1,408,000 tons.

Q. What is semi-chemical percentage of total pulp capacity in U. S.?

A. As of Jan. 1, 1957, semi-chemical capacity was 9%, sulfate 51%, ground 15%, sulfite 12%, dissolving 5%, soda 1%, and others 7%. In 1949 semi-chemical pulp accounted for 2%, and in 1952 about 5% of total.

Q. How has semi-chemical increased relative to other pulps?

A. Based on 1940 and 1955 productions, percentage changes are: Semi-chemical 860%; sulfate 310%; dissolving 290%; groundwood 170%; sulfite 100%; soda 85%; total 230%.

Q. How many semi-chemical mills are there now and their daily capacity?

A. 35 mills, with total daily capacity of 5,400 tons in 1956 and estimated 42 mills with daily capacity of 6,400 tons by end of 1957.

Q. What is geographical distribution of mills?

A. New England, 1; New York, 3; Pennsylvania, 2; South, 20; Lake States, 13; West, 3.

Q. How important a hardwood consumer is semi-chemical?

A. Semi-chemical ranks with sulfate industry: semi-chemical, 30%; sulfate, 30% soda, 20%; sulfite, 10%; groundwood, 10%.

Q. What woods are used for semi-chemical pulp?

A. It started with chestnut. Now, a wide variety of hardwoods is used, including poplar, gums, birches. In the Lake States, poplar is used; in the East, maple and birch; in Pennsylvania, a wide variety is used; in the South, gum and oak are favorites; on the West Coast, it's eucalyptus.

Q. How does semi-chemical yield compare with others?

A. Standard groundwood: 90% to 95%; chemi-groundwood: 85% to 90%; Asplund, Masonite, etc: 70% to 90%; semi-chemical: 65% to 90%; high-yield sulfate, sulfite: 50% to 65%; soda, sulfate, sulfite 40% to 50%. Cold caustic: 85% to 90% (an attrition process).

Q. What distinguishes a semi-chemical mill, equipment-wise?

A. The disk attrition mill for fiberizing softened chips. Chemical treatment is similar to chemical pulp mill and bleach plant is conventional.

Q. Can semi-chemical pulps be bleached?

A. Bleachable grades can be brightened to 65 to 70 brightness or fully bleached to 80 to 85 brightness. The big difference is that semi-chemical pulps gain strength in bleaching due to further delignification.

Q. What are properties of semi-chemical pulp?

A. Essentially short-fibered, but bleached semi-chemicals approach softwood sulfite in strength; unbleached corrugating pulp generally is stiff and hard and low in opacity, but a groundwood-type is possible; bleached pulps are used for blending and to impart strength, formation and good printing.

Q. What paper grades are semi-chemical pulps used in?

A. Corrugating (51% of total): foodboard; printing, bond, glassine and toweling.

Q. Is spent pulping liquor a problem?

A. Increasingly stringent anti-pollution laws require treatment. Cross recovery with kraft mill liquor and newly available process promise solution.

Q. Is there market semi-chemical pulp?

A. None at present. All are integrated mills.

END

Useful Tips for Control of Corrosion

Facts about steels, cathodes, ceramics, plastics

● These were fired at an audience of a couple hundred engineers and researchers from Lake States mills by an outstanding battery of corrosion engineers and metallurgists recently in Milwaukee.

It all came about because of the germ of an idea which began to sprout in a conversation, back in late 1953, between Steve J. Baisch, design engineer in charge of engineering, Thilmany Pulp & Paper Co., and Merrill Scheil, director of metallurgical research, A. O. Smith Corp.

Since then Mr. Baisch became chairman of Lake States TAPPI and the idea flowered at the Milwaukee meeting Apr. 9.

Warm-up for the session was a tour of the 135-acre plant of A. O. Smith, largest single user of steel in the world (over 1,000,000 tons per year). This is a $250,000,000 business for this company which started with bicycles, then made the first pressed frames for automobiles, then went to flash welding of line pipe, then the first welded pressure vessels in U.S. (1925, when insurance cos. were reluctant to underwrite them). A research staff of 250 spends some of its effort on pulp mill corrosion problems.

Digester Design is Critical . . .

With Mr. Scheil m.c.-ing, Les Pfeiffer, chief engineer, A. O. Smith process equipment division, started off the symposium by cautioning the mill men on design features that conduce corrosion. This was partly a review of an article he wrote for PULP & PAPER (Sept. 1955, page 94) in which he estimated that kraft digester corrosion costs U.S. pulp mills $2,000,000 annually. He reported the average corrosion rate was 0.31 in. per year and 22 cents per ton of pulp. He compared such costs as $62,280 for an alloy deposit welding job with $35,430 for 18-8 Moly T316 strip lining in vertical position.

"There are improper design features still used in digesters in many mills," said Mr. Pfeiffer at the recent session. "Circulation systems used have resulted in preferential corrosion areas."

Affecting corrosion, he said are: 1, chip size; 2, chip packing; 3, liquor volume; 4, steam inlets; and 5, digester relief.

Avoid improper design of digester supports, he said. Skirt type supports will distribute stresses. Mentioning streak corrosion by hot plate boiling, he said extensions and baffles will give longer digester life. Sand blasting to remove scale on carbon steel digesters is recommended—but it accelerates corrosion when done on stainless. It is important a complete vessel, or part of it, be stressed relieved.

Know Your Steels . . .

James Pease, welding engineer, urged mill men to know more about their welding equipment, what kind of electrodes are used, what the past history of their steels is—before welding. He recommended manual arc welding as "more versatile and valuable" than other methods. Always call in the insurance company before repairing vessels, he warned.

What's Oxyrim? . . .

Scott L. Henry, assistant director of metallurgical research, pinch-hitting for R. A. Huseby, metallurgical engineer, who was on a trip, told how Oxyrim steel was born and why. Mr. Henry, a 15-year man with A. O. Smith and a North Dakota Univ. graduate, said 25-year life for carbon steel digesters was not uncommon 25 years ago. Then in World War II days and

When Metallurgists Get Together

Samples and experts (left to right): LES PFEIFFER, chief engineer, A. O. Smith process equipment division; STEVE BAISCH, design engineer in charge of engineering, Thilmany Pulp & Paper Co.; WALTER BUBLITZ, research and development division, Kimberly-Clark Corp.; SCOTT L. HENRY, assistant director of metallurgical research, and MERRILL SCHEIL, director of metallurgical research, both of A. O. Smith.

later, faster cooks, more frequent cooks and differences in steel were principal accepted reasons for shortening digester life radically—to 8, 5 or even 3 years. He said A. O. Smith "invented a really new steel" when it came up with Oxyrim, which is not a stainless but "a better carbon steel for kraft pulping." Oxydized metal, he said, is more resistant to attack in high alkali.

"We tricked the steel to grab up additional oxygen," he said. Best steel to combat corrosion, he said, is low in silicon, low in residuals such as copper, and heavy metals, and contains oxygen in solution rather than as a product of deoxidation.

What Slides Show . . .

E. H. Schmidt, a Wisconsin graduate who has inspected some 70 digesters in this industry, showed with slides how areas of heavy liquor spray corroded, how scale builds up behind digester screens, how scale returned in pits when sanding was done on Type 316 clad plate, and examples of stress corrosion and crevice corrosion in digesters.

He concluded that the full corrosion picture at a pulp mill must be thoroughly examined before attempting to identify causes with materials or workmanship.

"We like to produce scale on carbon steel in an alkaline pulp mill but not in sulfite," commented Chairman Scheil.

Better Welds with Carbon Dioxide . . .

John P. Koss, supervisor in welding research, said that use of carbon dioxide gas instead of helium gas for welding carbon steels—as tested so far—gives better welds and results in unusual savings in costs. So far, it has not proved so advantageous with stainless steels. This the new C-omatic and C-omanual welding processes. They deposit weld metal of good ductibility and soundness, he said.

Success Seen for Cathodic Protection . . .

Larry C. Watson, director of the electrochemical lab, predicted that cathodic protection to alleviate corrosion is going to succeed with digesters and other mill vessels. When a new digester is designed with this system, the cost is probably no greater than with present digesters, he said. Some "guestimates" say that it costs $800 to $1,000 annually for replacement of anode systems every four years (this represents practically all the maintenance cost due to corrosion).

Work so far done in kraft mills points to the fact that if you can get enough cathodic current onto the surface of corroding metal so no corroding current comes out, you will get protection. He added: "We are still hoping to get it on vapor phases."

Could Have Been Prevented
Streak corrosion below a flush small pressure-indicating nozzle. Milwaukee meeting of TAPPI-ites saw this picture—were told a lip extension could have prevented it.

Ceramics and Plastics . . .

F. W. Nelson, director of ceramics research at A. O. Smith, said glass sprayed and then fired at 1600°F onto a steel backing, inside a tank, is "very strong," is highly resistant to high temperature acids and is "anti-sticking" because of its slick surface. Glass-lined vessels, he said, are about half the price of stainless steel vessels.

George Stein, director of plastic research, said 12 to 13 types of plastics—as different from each other as steel, copper and other metals—are used in pulp and paper mills. They go into guide rolls, tanks, vents, stacks and piping. He especially cited polyethelyne pipe and acetate butyrate pipe for cold corrosive services. Plastics are clean, abrasion resistant, light and easily shaped. Steel pipe lined with thermoplastics like Teflon is very promising. In some plastics, impact is not good, nor is abrasion resistance, and couplings are problems for some. He said plastics make the best high speed bearings—"You don't have to use grease—water is a lubricant. They are clean, so are better for paper processes."

Francis J. Ploederl, president of Wisconsin Protective Coating Co., Green Bay, Wis., told of plastic coating jobs done by his company in mills. There are some 15 types of coatings done for corrosion control.

The meeting closed with Thilmany's Mr. Baisch guiding a q. and a. period.

Some sights the delegates will remember on their tour—30 layers of steel plate welded together for a 6¾ in. vessel wall, at 5,000 psi; flash welding; cold working of steel; practically fully automated automobile frame plant—biggest in the world, and unusual equipment for X-ray studies of steels.

Says Unions Take Over Management Functions

Some labor unions have taken over what should be management functions, especially in regard to creating the proper social climate for workers, Dr. George S. Strother, academic vice president and dean of Northland College, Ashland, Wis., told a meeting of Northwestern Division Supts. recently.

He also predicted that more automation will create more human problems in industry.

Addressing a dinner meeting of the group at Green Bay, Wis., he said:

"One of the reasons for the extraordinary growth of unions is their success in ministering to the social needs of workers. This is very properly a concern of management. If management does not recognize its function in creating the proper social climate for workers, management functions will continue to be assumed by labor through management's own default."

He said workers themselves attach greater significance to "the intangibles of recognition, belonging and understanding" than to pay, hours of work and fringe benefits.

Joe E. Jenkins, The Northwest Paper Co., is chairman of the Northwestern Division. Nat Malcove, Northern Mills division of Marathon, chairmanned the meeting.

Research Prize For Major Polution Research

A research prize of American Society of Civil Engineers was awarded to Vinton W. Bacon, executive secretary of Northwest Pulp and Paper Assn. Only seven such prizes have been awarded since 1946. It consists of a $100 and an engraved certificate. Mr. Bacon was honored for initiating and guiding applied research on disposal of sewage and industrial wastes, effects of waste disposal, biological phases of stream sampling, and water quality standards, while serving as executive director for the California State Pollution Board. In magnitude, the report on water quality standards was the first of its kind in the world.

Western Mill Shooting for Top National Safety Record

At 8:00 a.m. on May 3, the Port Townsend (Wash.) Division, Crown Zellerbach Corp., passed the 3,000,000 man-hour mark without a disabling injury. On March 31 the mill had already broken the all-time safety record of the Pacific Coast Assn. of Pulp and Paper Manufacturers, 2,875,539 consecutive man hours without a lost-time accident, set by Longview Fibre Co., Longview, Wash., in 1949 and 1950.

Then it began shooting for the national record in the pulp, paper and paper products industry. This is held by Dixie Cup Co., paper converter of Easton, Pa., with 3,770,076 man hours of safe operation. Port Townsend Division consists of a 420 ton kraft pulp mill, two-machine paper mill and bag plant.

The current Port Townsend safety record, dating from June 19, 1955, has earned the division an impressive list of awards, including the Washington Governor's Trophy, the Zero Frequency Award of the Pacific Coast Assn. and the Otto Hartwig Award. Port Townsend was also named the winner, class B mills, by the National Safety Council and has won the National Safety Council Award of Honor.

"The breaking of the Pacific Coast Assn. safety record by the people of Port Townsend division is certainly a satisfying milestone in our safety progress," said Leo Ziel, Port Townsend resident manager, "but we are even prouder of the spirit of honest interest and cooperation our people have demonstrated in their attitude toward safety."

Award for K-C Subsidiary

J. C. WIG (left), mill manager of Kimberly-Clark's subsidiary Long Lac Pulp & Paper Co., Terrace Bay, Ont., receives from President GEORGE L. CARRUTHERS, on Ontario Pulp & Paper Makers' Safety Association, the safety award competed for by Ontario mills. Mr. Carruthers is president and general manager of the Interlake Tissue Mills, Ltd., Merritton, Ont. Mr. Wig paid tribute to D. C. PORTER, former manager at Long Lac, now manager at Coosa River Newsprint Co., another Kimberly-Clark affiliate, for building a sound accident prevention program.

Win First Aid Contest

First aid men from the Powell River Co. swept into first place against nine other teams from the industry in British Columbia and they will meet representatives of other industries. Winning team was coached by F. A. Scott, with J. W. Cockrill captain, team members being J. Laforce, G. M. Menzies, A. E. Grundle and R. Falconer.

Safest primary mill in B.C. during 1956, according to the industry's score, was the Port Mellon plant of Canadian Forest Products.

State Safety Certificate for Mill

Left to right: GEORGE NELSON, pres. of Wisconsin Council of Safety, and mgr. of claims and safety dept., Consolidated Water Power & Paper Co., presents council certificate for safety record to NEIL H. CHRISTIAN, Port Edwards mill manager; CLARENCE KAPLANEK, mill safety committee, and ERNIE BERRYMAN, Nekoosa-Edwards safety director.

Winners in 1956 National Safety Contest

Minnesota & Ontario Paper Co., International Falls, Minn., was winner of the National Safety Council's contest for North American pulp and paper mills in Group A (over 170,000 man-hours per month) for 1956.

Its frequency rate for disabling injuries of .86 put the Lake States mill ahead of Pioneer Flintkote of Los Angeles, with 1.09, and Longview Fibre Co., Longview, Wash., with 1.10. The 63 mills entered in the contest averaged a 5.41 rate.

Crown Zellerbach's Port Townsend, Wash., Kimberly-Clark's Munising, Mich., and Georgia Kraft's Macon, Ga. mills tied for first place in Group B (85,000 to 170,000 man-hours per month) with perfect records for 1956. In this group, 81 mills averaged a 7.07 frequency rate.

In Group C (42,500-85,000 man-hours), Scott's Falls Paper and Power Co., Oconto Falls, Wis., and Fraser Cos. Ltd., Newcastle, N. B., tied with zeros. West Virginia's Williamsburg, Pa., mill was next with .91, and 63 mills averaged 9.21.

In Group D (21,225 to 42,500 hours) six tied with perfect marks—Owens-Illinois, Big Island, Va.; Mead's Wheelwright Div., North Leominster, Mass.; Container Corp. of A's Ogden St. mill in Chicago and its Chattanooga, Tenn., mill; Marathon, Ashland, Wis., and Riegel's Hughesville, N.J. Average for 54 mills was 11.81.

In Group E (6,000 to 21,225 hours), nine were tied—Celotex, Cleveland; Kimberly-Clark, Kapsukasing, Ont.; International, Livermore, Me.; U.S. Gypsum, Gypsum, O.; Johns-Manville, Tilton, N.H.; National Vulcanized Fibre, Yorklyn, Del.; Spaulding Fibre's Hayes plant, and Banner Fibreboard, Wellsburg, West Va. Forty-five averaged 14.84.

In pulpwood logging Southern Advance (Robt. Gair), Hodge, La., led with a rate of 14.73 and St. Regis, Bucksport, Me., was second with 19.45. There were only 14 entered in this group.

Port Edwards Mill Hits Million Hour Safety Mark

Port Edwards, Wis., mill of Nekoosa-Edwards Paper Co., at 7 a.m. May 1, compiled a record of one million man-hours without a lost-time injury (161 accident-free work days). According to available records, other Wisconsin mills which have scored a similar record are Marathon at Rothschild, Scott at Oconto Falls, and Thilmany at Kaukauna.

PULP & PAPER

PICTURES OF PEOPLE IN THE NEWS

Two New Presidents

JACK W. WARNER (left), was elected president, Gulf States Paper Corp., Tuscaloosa, Ala., succeeding his mother, MRS. MILDRED W. WARNER, who has held executive positions with Gulf States over 40 years. Mr. Warner, former exec. vice pres. and treas., will continue as treas.

MARVIN W. SWAIN (right), is new president of Alton Box Board Co., Alton, Ill., succeeding F. BURCH IJAMS who becomes chairman. Mr. Swaim is director of Natl. Assn. of Mfrs.; New Orleans and Great Northern Railroad and First Natl. Bank and Trust Co. in Alton. He is former pres. of Natl. Paperboard Assn.

Scott Assists Merchants

G. WILLING PEPPER (left), vice pres. Scott Paper Co., and ROLLAND R. WHITEMAN, vice pres. i/c sales, Blake, Moffitt & Towne, San Francisco, review the three-year history of Scott's merchants advisory committee. Mr. Whiteman is newly elected chairman of the committee.

Promotions in Wisconsin

E. DANIEL NYSTRAND (left) becomes vice pres. i/c engineering at Paper Converting Machine Co., Green Bay, Wis. ALBERT GEHRKE (right) succeeds Mr. Nystrand as chief engineer. Mr. Nystrand graduated from Chalmers' Tech. in Gothenburg, Sweden, in 1926 and came to the U.S. the following year. He has been with Paper Converting Machine Co. for 19 years. Mr. Gehrke joined the firm in 1940. He has a degree in mechanical engineering from the American School of Chicago.

In Southern News

HOWARD D. HINMAN (left), mgr. International Paper Co.'s of Georgetown, S.C., mill, was promoted to mgr. of new mill at Pine Bluff, Ark., according to ERLING RIIS, vice pres. and gen. mgr. of Southern Kraft div. A graduate of Dartmouth College, Mr. Hinman joined IP in 1936 at Panama City mill. After three years in Air Force during WW II, he became mgr. of the firm's Bastrop, La., mill and in 1951, mgr. of the Georgetown mill.

ARCHIE COLBY (right), former gen. sales mgr. of Greer Hydraulics, Inc., has joined Gulf States Paper Corp., Tuscaloosa, Ala., as industrial engineer. Mr. Colby has b.s. and m.s. degrees from Purdue.

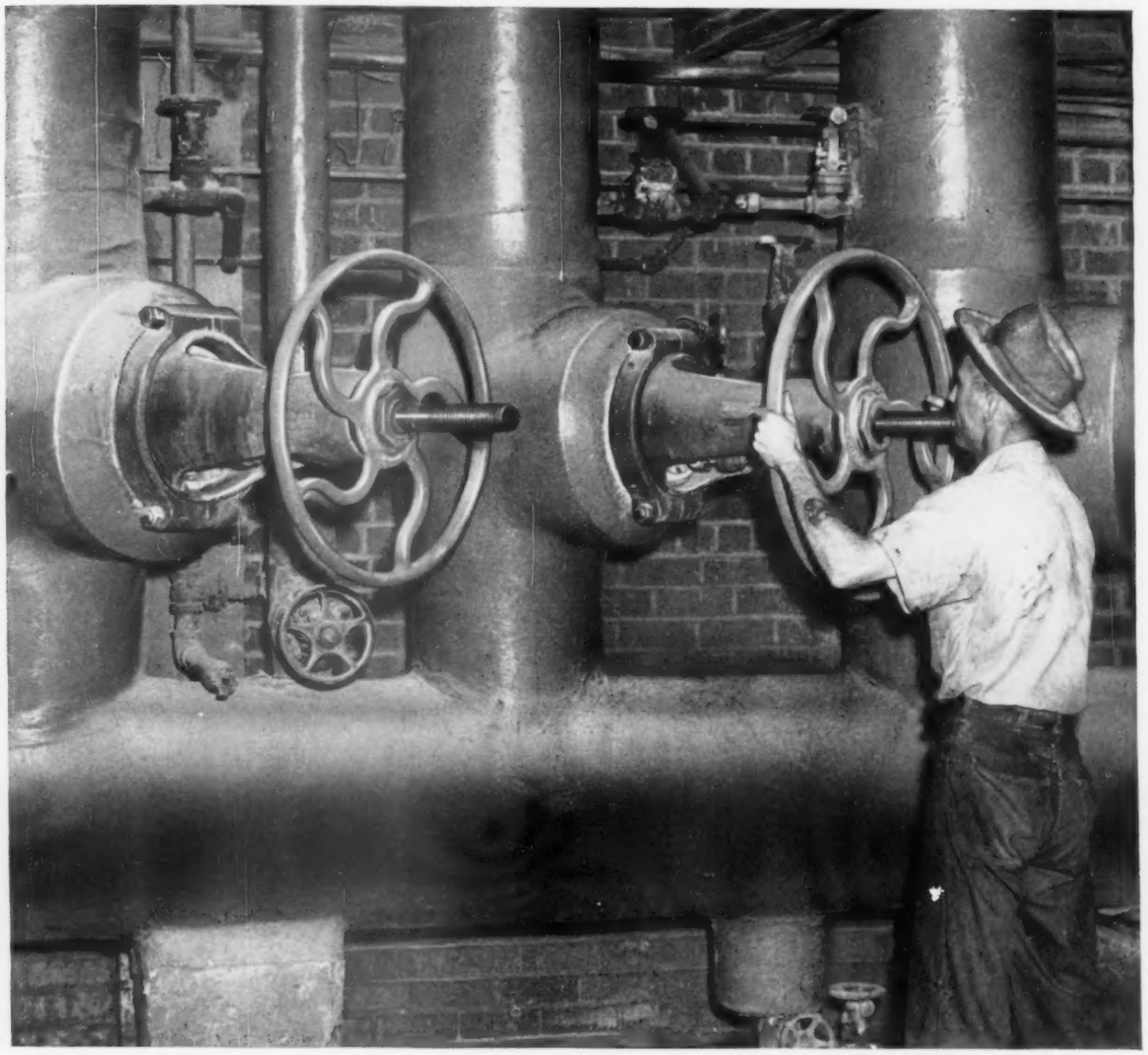
New Vice Presidents

Sandwell & Co. Ltd., is designing and supervising construction of a new $20 million pulp and paper mill in East Pakistan for the Pakistan Government and Sandwell International Ltd. has been retained to manage the operation until after start-up of production in 1960. To head its management team, H. R. Horne, president of Sandwell International, announces appointment of GERALD PENNEY (top left) as vice president. Mr. Penney has for years been mill manager of Bowaters Newfoundland Pulp and Paper Mills. Before that he was with International Paper Co. P. R. Sandwell, president of the firm, also announces the appointment of S. D. FORD, (top right) E. S. BARTON, (lower left) and S. J. VAKOMIES, (lower right) as Vice Presidents.

New Officers at Mead

Elected at the annual meeting of The Mead Corp., (left to right): DONALD F. MORRIS, first vice pres. since 1952, becomes president; GEORGE H. PRINGLE, vice pres. i/c white paper operations since 1952, becomes exec. vice pres., mfg.; AL H. MAHRT, vice pres. since 1948, becomes exec. vice pres., finance; LEONARD R. GROWDON, vice pres. i/c board mills since 1952, becomes vice pres., operations; and J. W. McSWINEY, exec. ass't to the pres., becomes vice pres., development. HOWARD E. WHITAKER, pres. since 1952, was elected chairman and remains chief executive officer. SYDNEY FERGUSON, Mead chairman since 1948, retires under the firm's retirement plan, but continues as director. GEORGE H. MEAD was re-elected honorary chairman. H. T. MEAD, vice pres. for financial relations since 1951, was re-elected vice pres. and named asst. to the pres. i/c converting operations. A. RODNEY BOREN, asst. vice pres. since 1953, becomes vice pres., succeeding ALAN G. GOLDSMITH who is retiring. WILLIAM J. CASSADY, JR., pres., Jackson Box Co., becomes vice pres., corrugated box mfg. ROBERT J. BLUM, exec. vice pres., Mead Board Sales Co., was elected president of that firm. Two new directors are ARTHUR L. HARRIS, pres., Atlanta Paper Co., Atlanta, Ga., and GEORGE H. PRINGLE. Shareholders voted to approve affiliation of Atlanta Paper Co. with The Mead Corp. and the acquisition of Industrial Container & Paper Corp., by Jackson Box Co.

No Bonnet-Joint Maintenance—No Bonnet-Joint Leakage



These valves helped the maintenance crew win a losing battle

This process industry plant saw the danger signal. Servicing leaky valve bonnet joints was taking too much time. Other important maintenance work was being neglected.

That's why, in 1947, when expanding the power plant, Crane Pressure-Seal Bonnet Gates were chosen for main steam service as shown above. Working pressure: 600 psi at 725 deg. F.

These Crane valves need no bonnet joint maintenance. The joint is leakproof—sealed tight by internal fluid pressure. Crane alloy seats and flexible wedge disc make closure tight and easy.

To date, the Crane Pressure-Seal Gates have given this plant over 9 years' uninterrupted service. The maintenance crew hasn't touched them except for routine care.

Full information on these modern power service valves is given in Circular AD-1936. Get a copy from your Crane Representative or by writing to address below.

Ask for Circular AD-1936

CRANE VALVES & FITTINGS

PIPE • PLUMBING • KITCHENS • HEATING • AIR CONDITIONING

Since 1855—Crane Co., General Offices: Chicago 5, Ill. Branches and Wholesalers Serving All Areas

MACHINE TENDER, BOWATERS SOUTHERN PAPER CORPORATION, CALHOUN, TENNESSEE. PHOTO BY J. W. MILLER

Beloit Air Guide, by providing rapid correction of wire and felt misalignment, has brought important production gains to papermakers. Rapid, positive corrective action is assured, even at very high machine speeds; the patented mechanism is simple and reliable. For other details and advantages, please see following page.

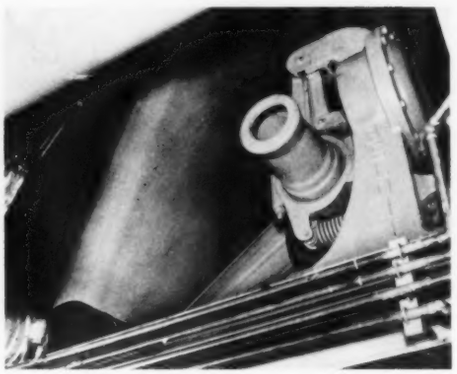
BELOIT AIR GUIDES

. . . provide rapid, positive adjustment with maximum dependability and versatility

Introduction of the patented Beloit Air Guide in 1948 brought important production gains to papermakers. Fast correction of wire and felt misalignment helped prevent costly breakdowns in the production of paper at all machine speeds. Heretofore, efficient operation had been handicapped by the inherent weakness found in other types of guides-slow reaction times and heavy drags on the wire or felt presented many production drawbacks.

Beloit Air Guides, on the other hand, employ a simple air-line connection between the paddle and guide roll. The paddle barely touches the wire or felt and quickly reacts to changes in pressure to "bleed" or increase the air pressure in the guide roll diaphragm, providing rapid, positive, corrective action at all machine speeds.

The simplicity of this arrangement provides papermakers with a versatility and a flexibility of arrangement unobtainable with other guiding systems. The Beloit Air Guide can be used horizontally or vertically to control the alignment of felts or wires. The guide palm can be located at the critical guide point and the guide roll at the point in the run where it can give the most efficient corrective action. In addition to these advantages, guide maintenance is held to a minimum due to the limited number of moving parts—the ruggedness of the guide of the guide roll



support—and the long life of the air diaphragm. There are no highly stressed parts, metal-to-metal contact is minimized. Today, there are literally hundreds of Beloit Air Guides in operation in mills around the world. Comment most usually heard: "We hardly know that they are there!"

your partner in papermaking **BELOIT**

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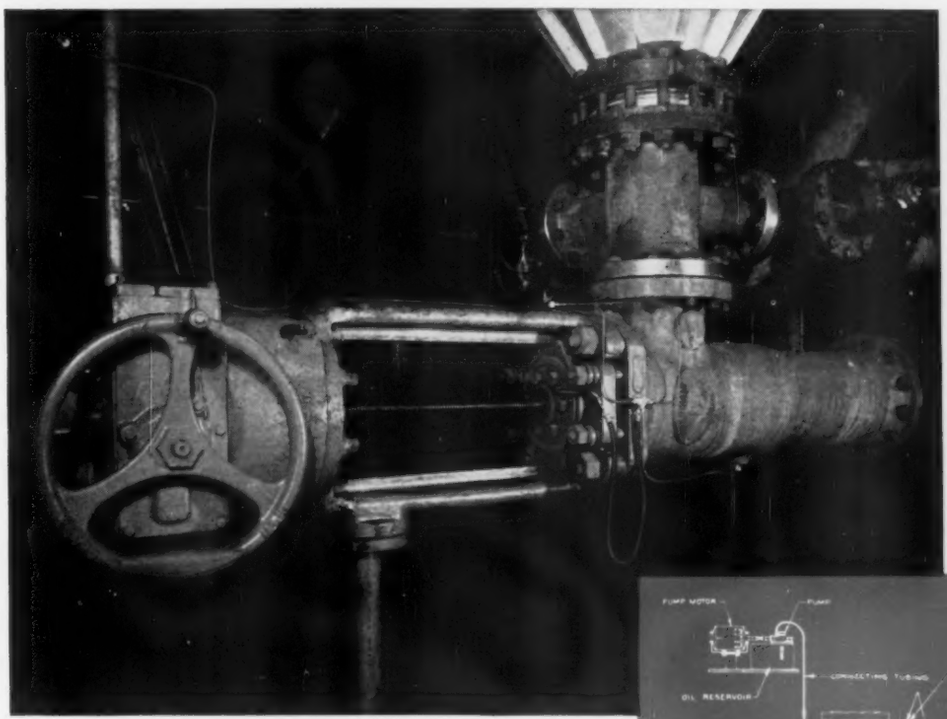
PAPER MACHINERY

WHEN YOU BUY BELOIT...YOU BUY MORE THAN A MACHINE

YARWAY DIGESTER BLOW VALVES with AUTOMATIC LUBRICATION



One of a battery of Yarway Digester Blow Valves, motor-operated, with automatic lubricators, in a large Washington pulp mill.

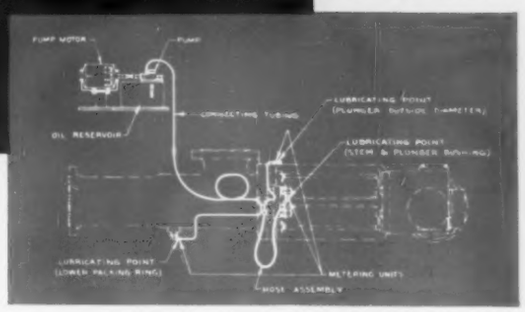


Diagram showing arrangement of Yarway Automatic Lubricator on Yarway Digester Blow Valve.

...help increase production, cut maintenance and save manpower

Automatic lubricators on Yarway Seatless Digester Blow Valves add new cost-saving and labor saving features to digester operation.

Push-button control of these valves also provides automatic lubrication of them at the *right* places . . . at the *right* time. Result—less maintenance, fewer production delays, release of manpower for other productive work.

Reports on low operating cost experiences from pulp mills using Yarway Digester Valves, are impressive, too. One large mill found the resultant *savings in operation and maintenance the first year more than paid for the cost of their new 4 Yarway Digester Valves.*

Yarway Seatless Digester Blow Valves are either motor or hydraulically operated. All are remote controlled—designed for clean, free discharge and tight shut-off.

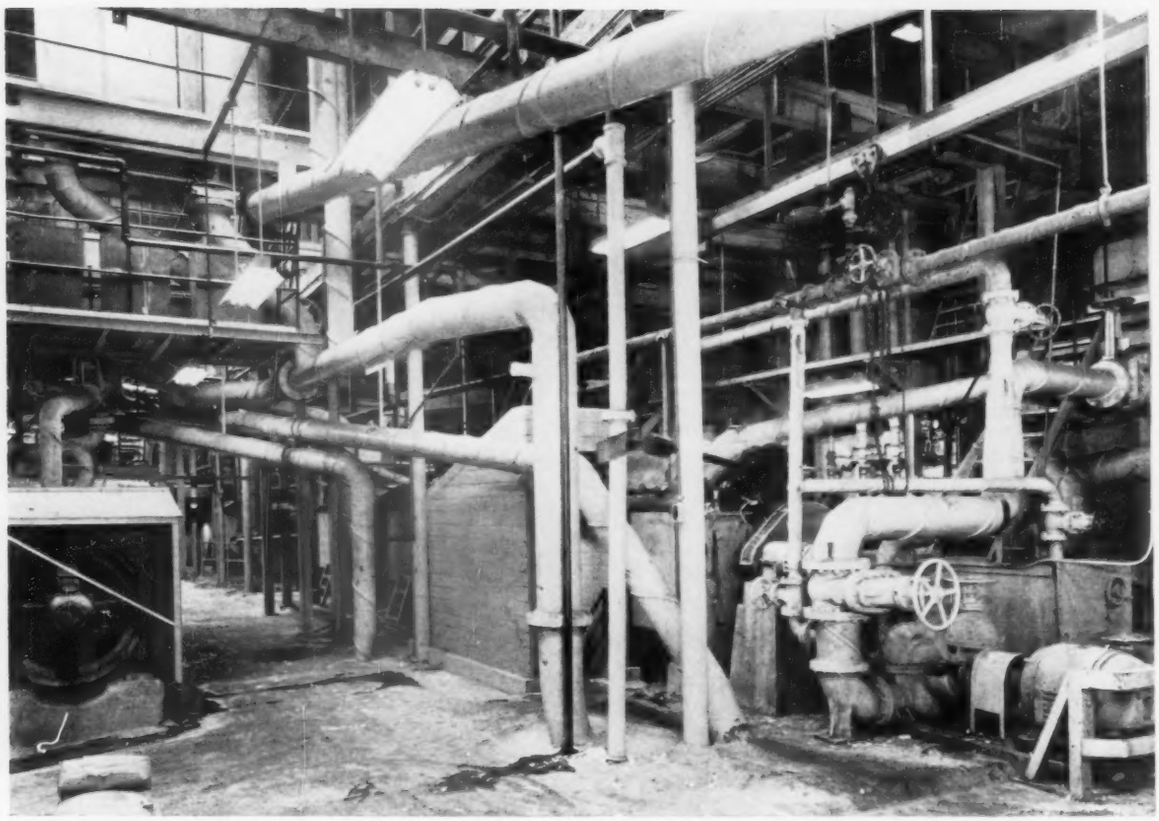
For full information on Yarway Seatless Digester Blow Valves, write for Bulletin B-441. No obligation.

YARNALL-WARING COMPANY
103 Mermaid Ave., Philadelphia 18, Pa.
BRANCH OFFICES IN PRINCIPAL CITIES

YARWAY **DIGESTER BLOW VALVES**

PIPE FABRICATION

With Built-in PLUS Performance



No matter what your piping specifications call for, Naylor fabrication service can give you exactly what you need in steel, alloys or stainless.

The extra strength and safety built into the exclusive Naylor Spiralweld structure assures advantages not found in other pipe of the same wall thickness. This PLUS performance is characteristic of Naylor fabrications in any piping layout—simple or complex. By combining pipe and fittings in prefabricated units, extra flanges and connections can be eliminated—to give you economy along with this extra performance.

Whether you need stock pipe lengths, standard fittings, special fabrications or engineered layouts, it will pay you to check with Naylor.

Write for Bulletins 507 and 525, and send specifications for quotation.

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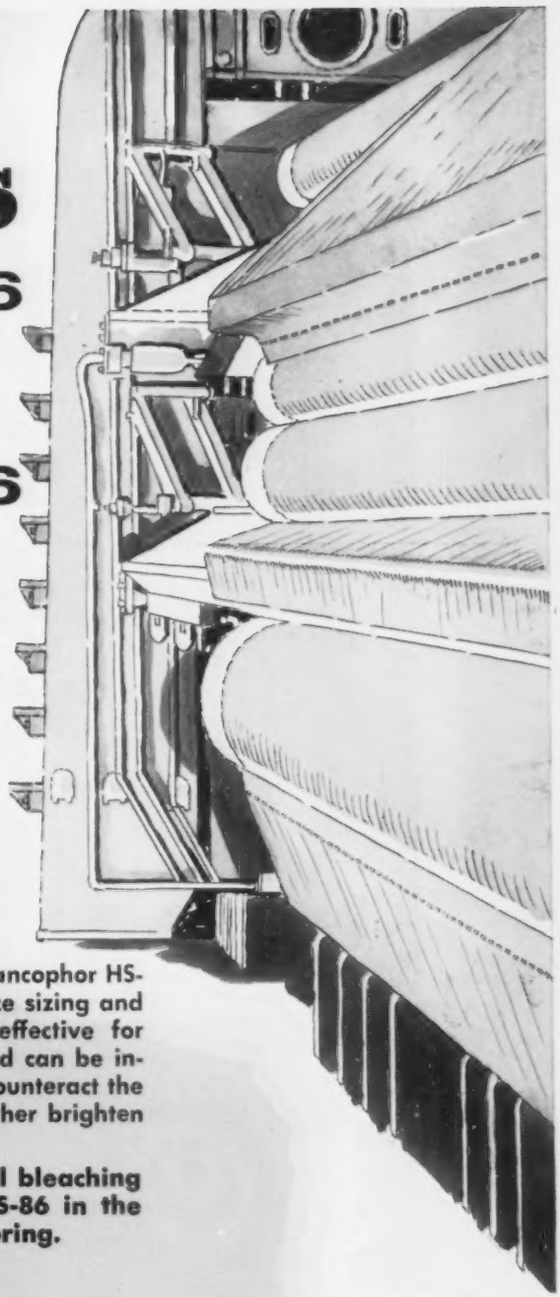
BRIGHTNESS

BLANCOPHOR® HS-76

on the calender →



BLANCOPHOR LS-86

in the beater

For fine paper, tissue, or folding board — brightness and whiteness meet the eye and boost paper sales.

The new Blancophor LS-86 and the lower concentration, Blancophor LS-81, are economical, fast exhausting optical brighteners specifically designed for beater application. Blancophor LS-86 and LS-81 give extremely high whites with a blue-violet hue.

Blancophor HS-76 and the lower concentration, Blancophor HS-71, are still the outstanding brighteners for surface sizing and coating paper. These highly-soluble types are effective for brightening bleached boards on the calender, and can be incorporated into starch or glue tub sizes, either to counteract the yellowing caused by sizing ingredients, or to further brighten the paper.

From the standpoint of economy, best optical bleaching effects are obtained by using Blancophor LS-86 in the beater and Blancophor HS-76 for surface coloring.

For technical literature on these effective, economical brighteners, write us today.

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Blancophor LS-86 manufactured by General Aniline & Film Corp. is sold outside the United States under the trade name Tinsofen LS and Blancophor HS-76 and HS-71 under the trade names Tinsofen D and Tinsofen DP respectively.

TORRINGTON *SPHERICAL ROLLER* BEARINGS

This bearing can take thrust, too!

Design is the secret. TORRINGTON Spherical Roller Bearings are made with an integral center flange on the inner race. This assures *positive radial stability and accurate positioning of rollers* wherever high radial load and heavy thrust are encountered under conditions of misalignment.

From crushers to cranes, power shovels to pulverizers, you get long, maintenance-free operation, better performance in your equipment, more value from your bearing dollar when you specify these rugged dependable bearings.

Prove to yourself that TORRINGTON design does make a difference. Next time specify TORRINGTON Spherical Roller Bearings. They're available with either straight or tapered bore, for shaft or adapter mounting.

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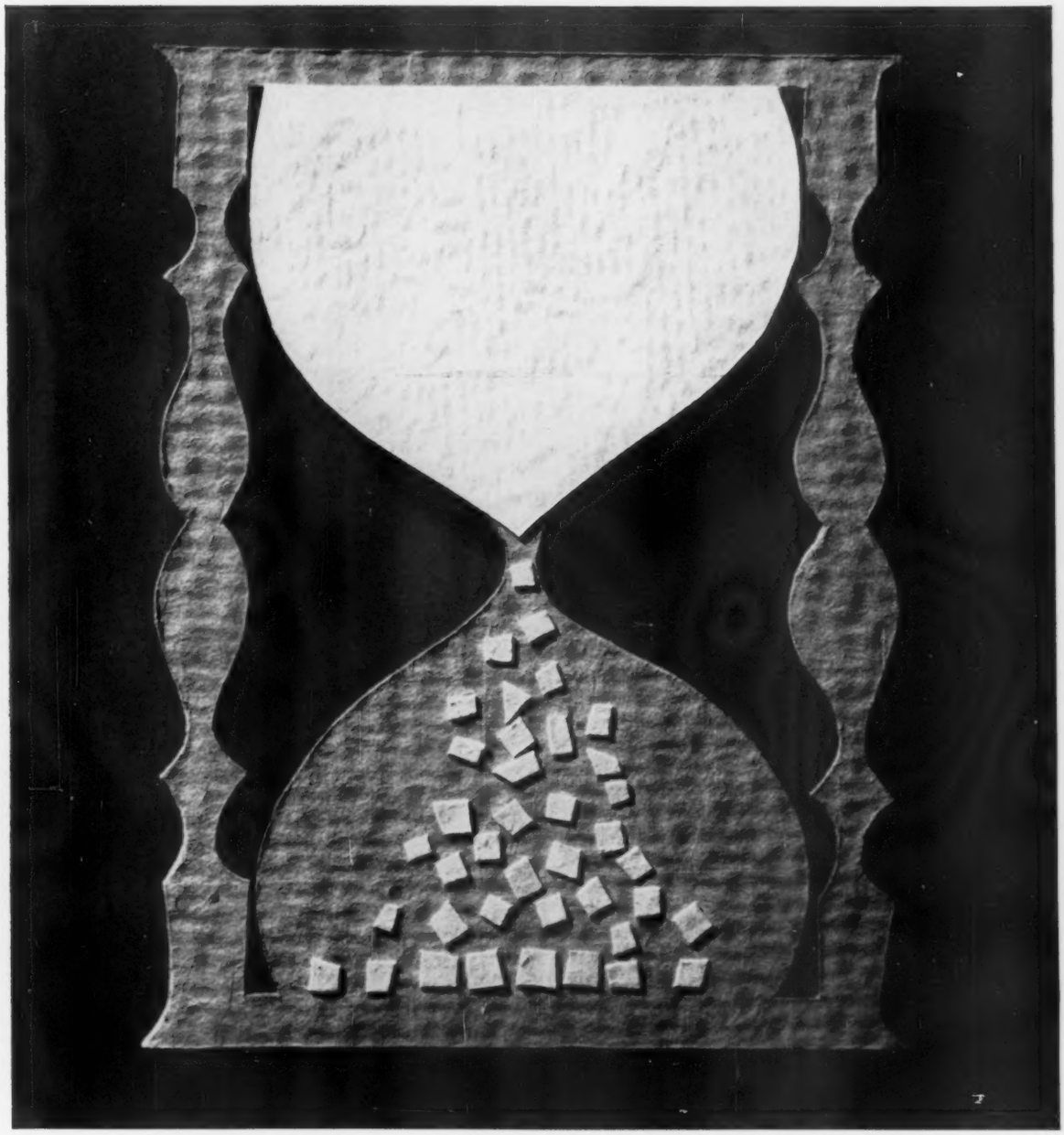

The pulps used to make this illustration are MacMillan & Bloedel Unbleached Sulphate (Kraft) and Mead Bleached Soda Pulp

Mead customers always get their pulp on time

Constant attention to service is just one of the reasons why Mead Pulp Sales, Inc. has been able to serve so many clients so well for more than 35 years.

Drawing from vast natural resources and eight great mills, Mead furnishes quality pulp to meet your needs, whether chemical or mechanical, from hardwoods or soft woods, bleached or unbleached. Tell us your requirements. Our representative will be glad to show you why Mead can meet your every demand.

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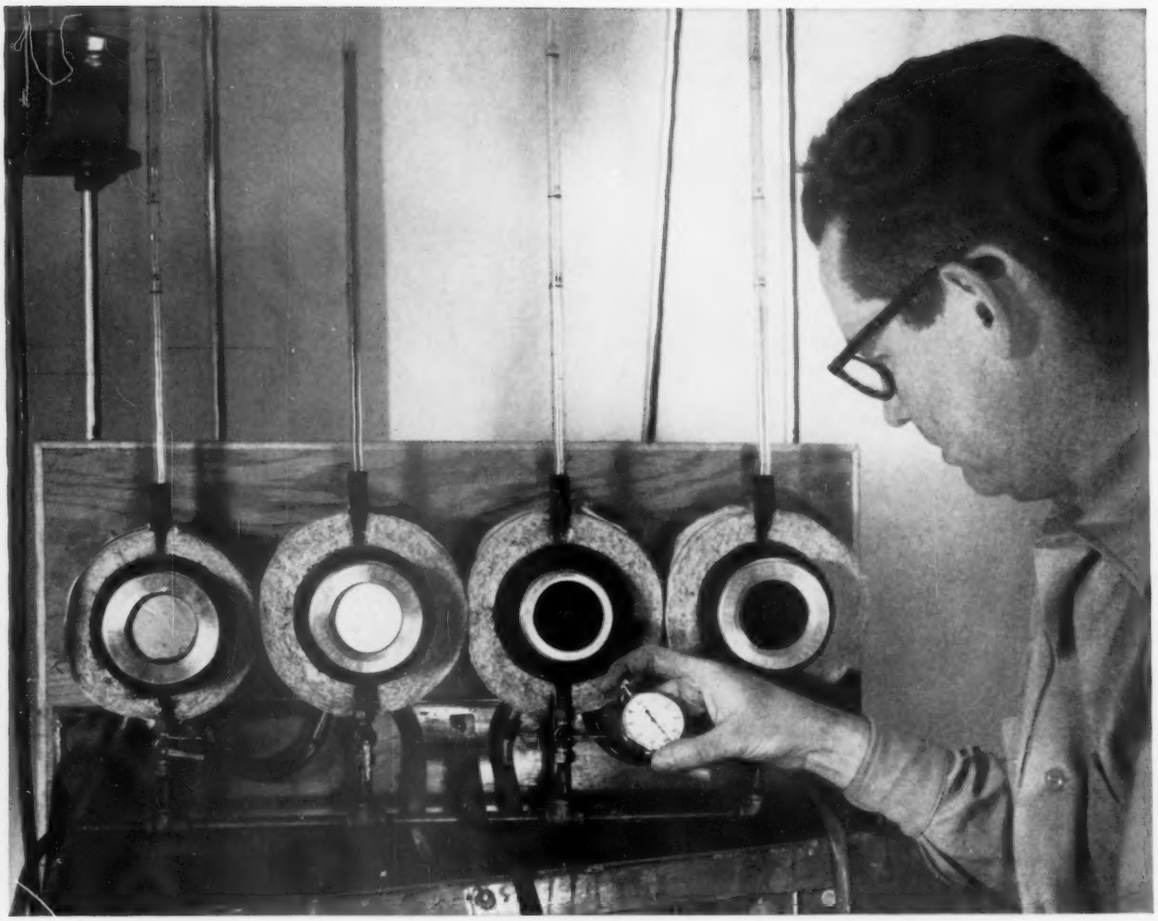

FOOD CONTAINER BOARD (at left) sized with 3% rosin compared on a penescope with food board sized with 2% Mersize. Note visible proof of the high sizing efficiency and greater water-resistance gained with Mersize.

Having trouble meeting penescope tests? Use Mersize

"Now we have no trouble meeting our penescope specifications." That's what Monsanto technical service men hear from food container board mills using Mersize.

From the day you begin using Mersize, you'll see the money-saving difference. You'll meet penescope specifications on the first try more often. You'll save time, extra work, and get more consistent, high-quality production.

Mersize is *chemically* tailored to give you dependable, uniform sizing. With Mersize you can rely on greater resistance to liquids with less size . . . and results will be more uniform day after day. A mill trial will prove it to you.

MERSIZE gives you 20% to 30% lower sizing costs
Better sizing with less size solids
Low air stabilization factor
High resistance to feathering
More uniform sizing of hard-to-size pulps
MERSIZE: Reg. U. S. Pat. Off.

Out of every 10 mills that have given Mersize a thorough mill trial, 9 have become steady users.

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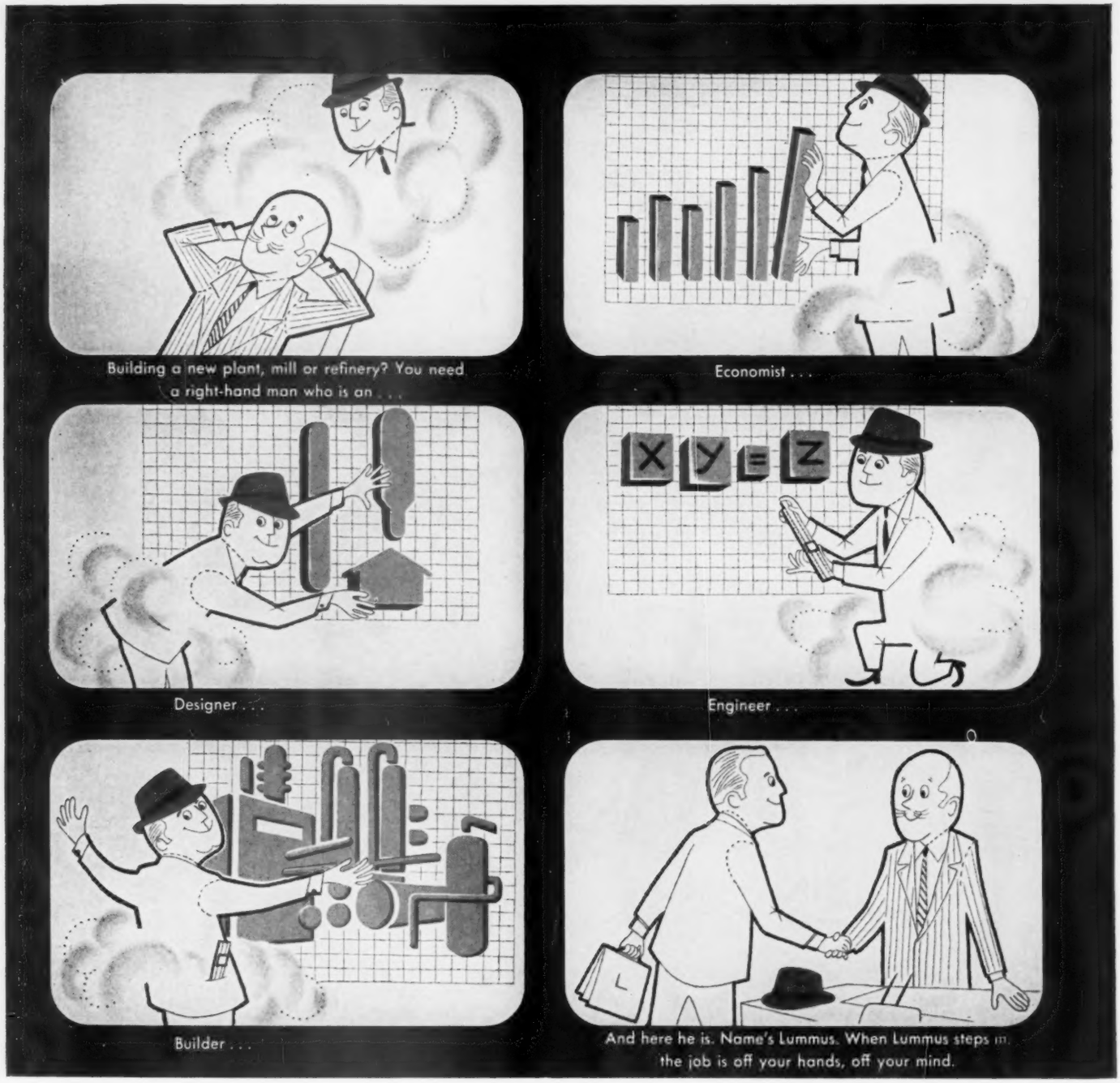
In New England—CARTER RICE STORRS & BEMENT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And here he is. Name's Lummus. When Lummus steps in, the job is off your hands, off your mind.

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Unfamiliar problems pile up fast when you start planning a new plant. To "do it yourself" is to do it the hard way . . . at the expense of time and energies diverted from regular operations. Instead, make The Lummus Company your right-hand man. From concept to startup you acquire the talents of thousands of specialists, fifty years of world-wide experience. Let the Lummus team take the whole complex job off your hands.

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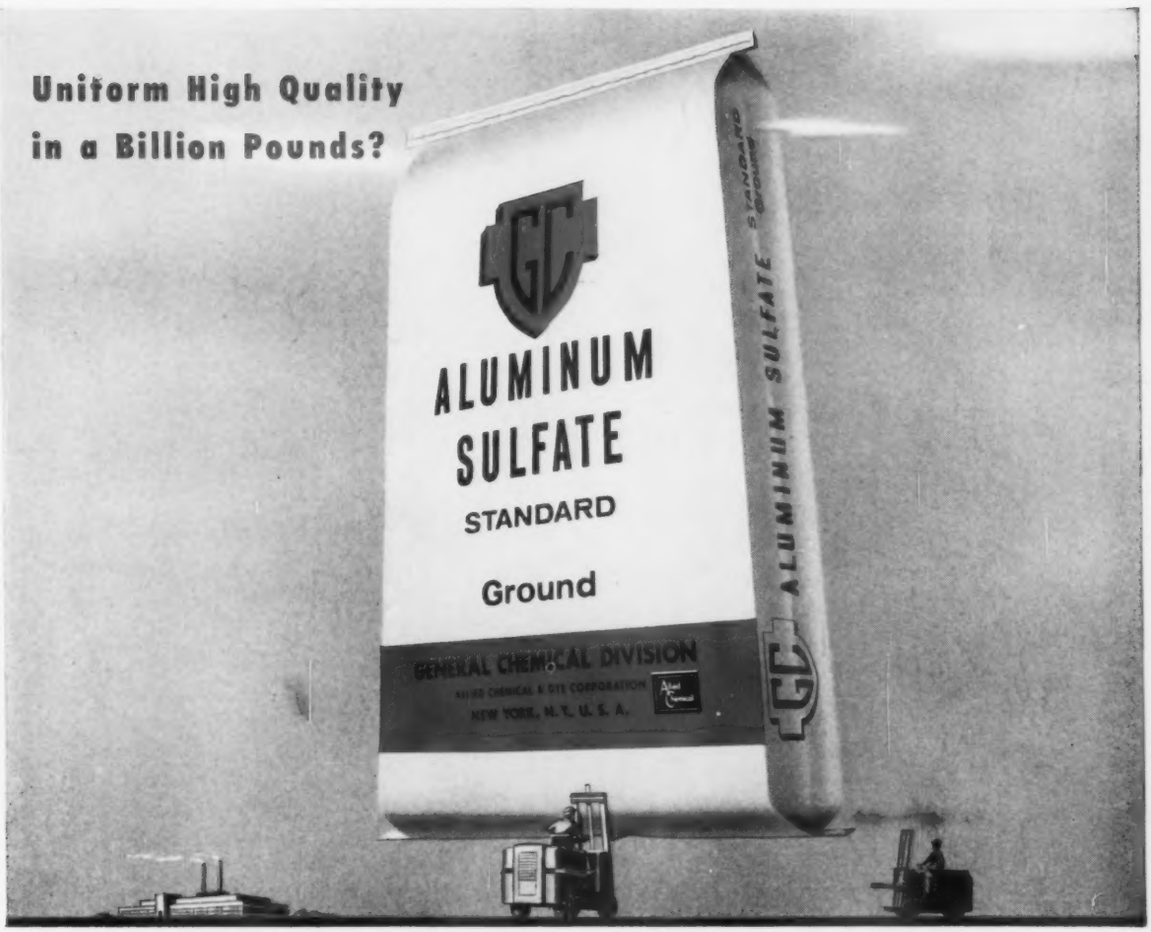

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GENERAL CHEMICAL "ALUM"

The American paper industry now uses Aluminum Sulfate in mountain-size quantities. Consumption has soared to approximately one billion pounds a year. And, every pound used should always be of the same high quality and uniformity if production troubles are to be avoided and an acceptable product assured.

LEADING PAPER MAKERS STANDARDIZE ON GENERAL CHEMICAL ALUMINUM SULFATE

This is one of the many reasons why so many leading paper manufacturers standardize on General Chemical Aluminum Sulfate. They know you pay no premium for the consistent high quality of General Chemical Alum . . . year after year. They know, too, that they can count on General Chemical's experience and multi-plant manufacturing facilities to meet all their needs wherever their pulp and paper mills are located.

Meeting Every Paper Requirement—
General Chemical Dry and Liquid Aluminum Sulfate is made in all desired paper-making grades and forms.

Prompt Delivery Everywhere—
General Chemical has a coast-to-coast network of 23 Aluminum Sulfate plants plus many more stock points to insure prompt, "on schedule" deliveries.

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A reputation for leadership

Skill and experience have earned APPLETON MACHINE COMPANY the reputation for *leadership* with the pulp and paper industry. That's why APPLETON was chosen to build this 16 roll, 84" supercalender that sets the pace for glassine production efficiency.

This high-pressure glassine stack combines functional beauty with rugged strength and advanced mechanical design . . . and like all other APPLETON products, it was *custom-built* for the specific job and installation.

Let an APPLETON representative help *you!* He has an unmatched record of problem-solving.

APPLETON MACHINE COMPANY

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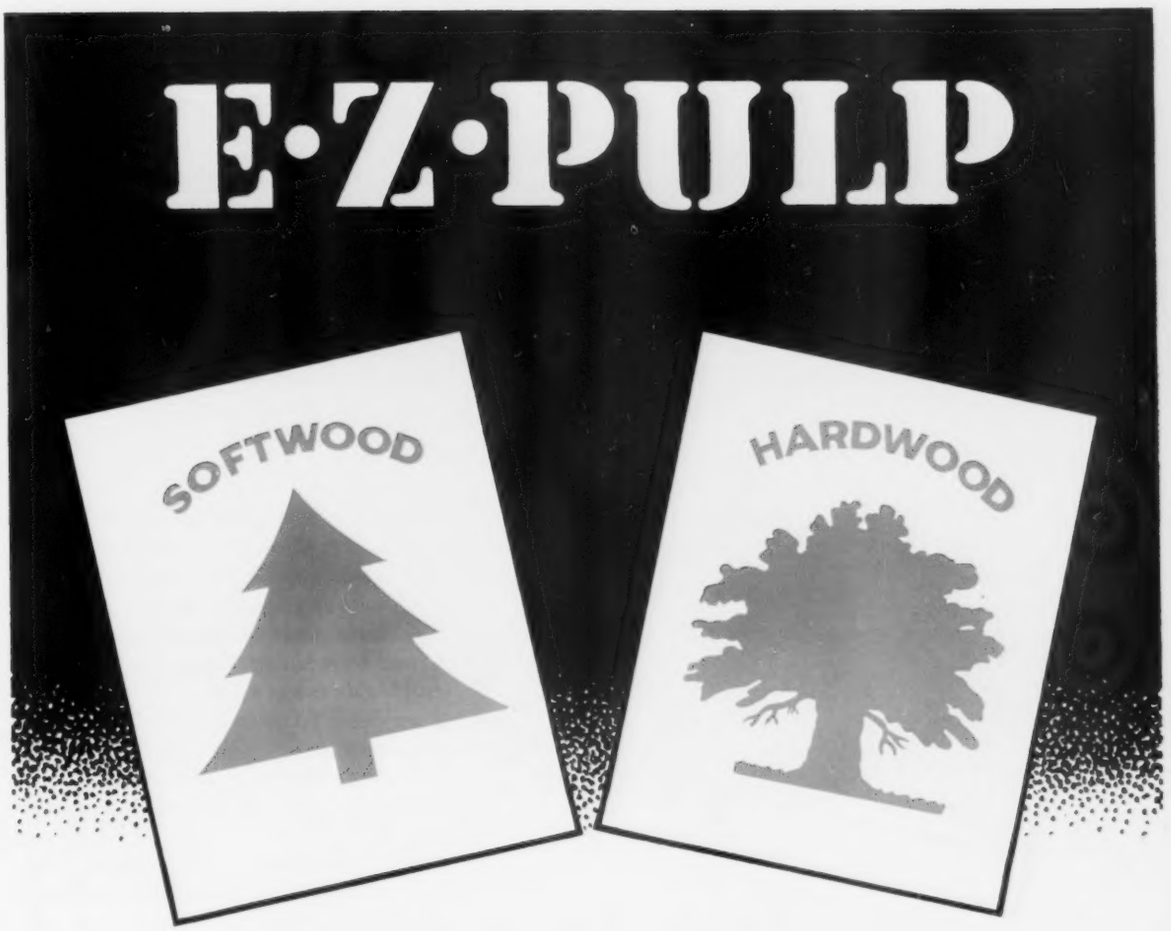
E·Z·PULP



SYMBOLS OF QUALITY

Three generations of paper making experience has culminated in the development of a brand new product called E-Z PULP. It will bear the above symbols of quality: E-Z PULP will be produced in Gulf States' new sulphate mill at Demopolis, Alabama. Installation of ultra modern equipment is rapidly being completed, and in a few short weeks the plant will be ready for production.

The endless supply of softwood and hardwood from the heart of the South's timberland assures a steady, dependable source of strong, clean, uniform super white pulp. E-Z PULP will meet the most exacting specifications because it is created for use in the manufacture of quality papers.

Remember the green tree trademarks—they are symbols of quality.
Complete information and technical aid are available. Write our E-Z PULP Sales Division (Dept. E), Box 491, Tuscaloosa, Alabama.

Gulf States Paper
CORPORATION

E-Z PULP SALES DIVISION, TUSCALOOSA, ALABAMA

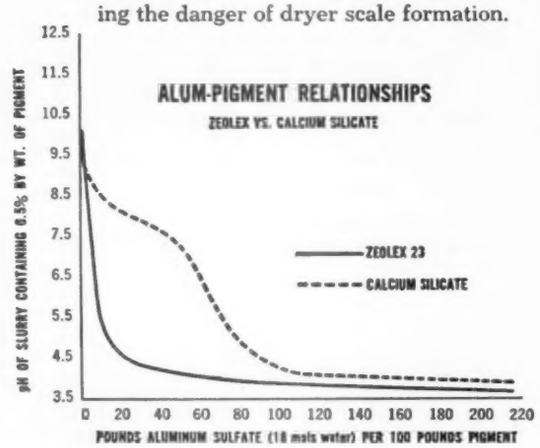
One of the few paper makers who can't be helped by HUBER ZEOLEX®

The paper wasp—nature's paper maker extraordinary—can ignore brightness, opacity or cost. But *papermakers* the world over must meet and solve these problems daily. Brightness and opacity equal to that from high-cost pigments can be obtained at *lower cost* with Huber Zeolex. In successful world-wide use as a filler, Zeolex upgrades paper made from de-inked stocks; meets government opacity specifications for offset paper and has proved successful in board specialties, writing, offset and book stock.

Tried, proven and used in carload lots, Zeolex 23 is one of a related group of finely divided sodium silico aluminates which can be "tailored" by Huber to fit your special paper making needs.

Let our Zeolex researchers help you with your problem. Send for descriptive folder and free working sample of Zeolex—today. Available in beaded or non-dusting pelleted form.

This graph compares Zeolex 23 with calcium silicate pigments now being used as paper fillers. Note the low alum demand with Zeolex—in itself an economy—lessening the danger of dryer scale formation.



The Zeolexes are finely divided synthetic sodium silico aluminates, presently made within the following ranges of physical properties:

Brightness (G.E.)	93-95
Average Particle Diameter (microns)	0.02-0.05
Oil Absorption (cc/100gm)	125-165
Surface Area (B.E.T.)	50-200
Refractive Index	1.51-1.55
pH (20% slurry)	5-12
Specific Gravity	2.1
Density (lbs./cu. ft.)	10-20

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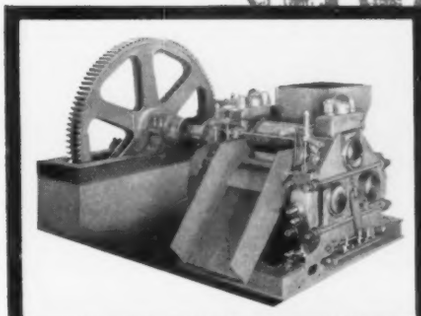
Manufacturers of **CHEMICALS • CARBON BLACKS • CLAYS**

solve your burning question!

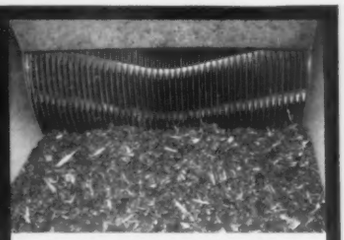
MAKE PROFITABLE FUEL FROM WET BARK

WITH A **FULTON ROLL PRESS**

The photographs show how a Fulton Roll Press de-waters and reduces mill refuse into efficient fuel... ALL IN ONE CONTINUOUS OPERATION.



Water is squeezed from bark containing 70% moisture and averaging only 5,582 BTU's per pound.



Dry fuel containing only 47% moisture and averaging 7,390 BTU's... ready for economical burning.

FEED WASTE INTO THE HOPPER
WATCH DRY FUEL POUR OUT

The Fulton Roll Press will rid your plant of soggy bark, knots, screenings and other fibrous material. And this process costs far less than inefficient "batch" methods.

It took FULTON... with over 104 years experience in dehydrating fibrous material for the sugar industry... to develop the remarkable Roll Press.

MAKE US PROVE IT ON YOUR MATERIAL...

Mail coupon now for full details and FREE TEST RUN of materials you want to process.

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Please send full details of FULTON ROLL PRESS.
We are interested in FREE TEST RUN of .....

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CAUSTIC SODA
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Your order is backed up by the output of five plants from the Great Lakes to the Gulf: Niagara Falls, N. Y.; Saltville, Va.; Huntsville and McIntosh, Ala.; and Lake Charles, La. Shipping schedules, geared to your operation, assure you that Mathieson caustic arrives on time, in the quality and quantity required.

Available grades include 50% and 73% liquid (in insulated and lined tank cars, barges and tankers) and 76% solid, flake, granular, ground and powdered (in drum shipments). For further information, call your Olin Mathieson representative

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INDUSTRIAL CHEMICALS DIVISION • BALTIMORE 3, MD.

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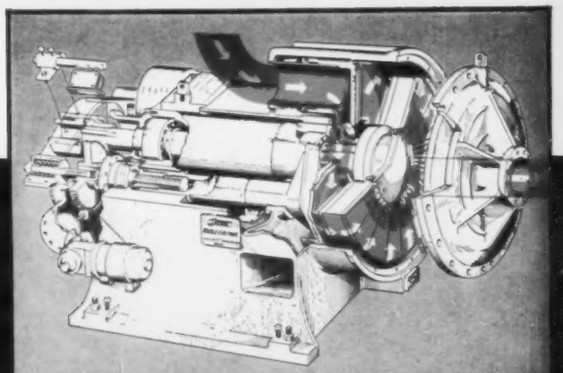
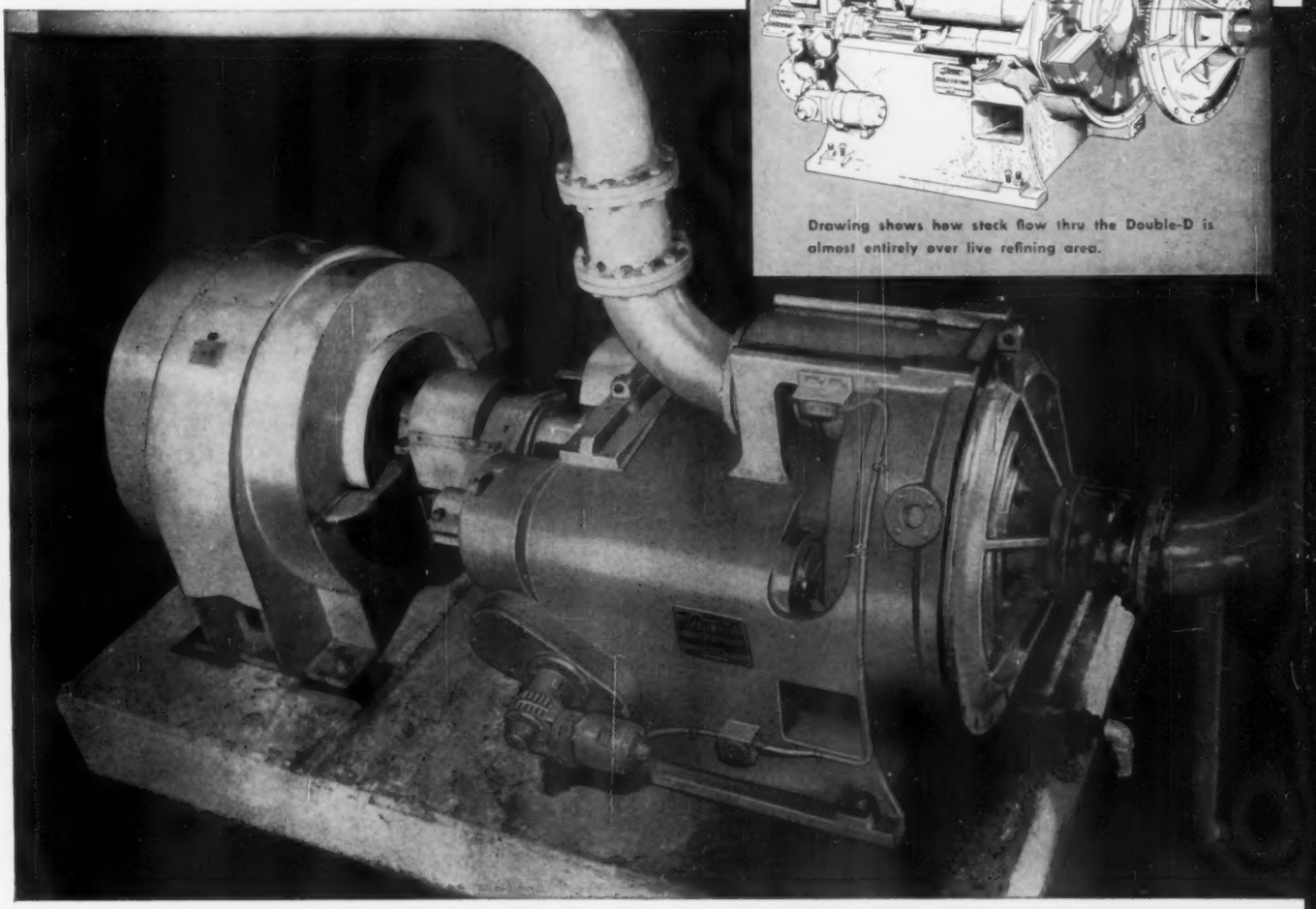
ORGANICS: Ethylene Oxide · Ethylene Glycols · Polyethylene Glycols · Glycol Ether Solvents · Ethylene Dichloride · Dichloroethylether · Formaldehyde · Methanol Sodium Methylate · Hexamine · Ethylene Diamine · Polyamines · Ethanolamines · Trichlorophenol · Surfactants

This installation photo illustrates the compactness, economy of floor space and simplicity of piping of the Double-D Refiner.



Drawing shows how stock flow thru the Double-D is almost entirely over live refining area.



Over 2,200 square inches of live refining area

Jones DOUBLE-D with DOUBLE EQUA-FLO EFFECT

The only unit of its kind with **two stages of refining** in the same machine, the Jones Double-D actually does twice the work of conventional refiners, because it has double the refining area — 2200 square inches in the 42" model.

With over 50 sold to date, the Double-D in two years use has more than lived up to experimental forecasts — in performance, efficiency, ease of maintenance and savings in horsepower.

Ask your Jones representative for details or write direct for Bulletin EDJ-1083.

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Pittsfield, Massachusetts

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Three NEW Brands added to the

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Dryer Felt Family

SIAMESE · TOUR BOSS · RAMESES

TO SERVE YOU BETTER—Mount Vernon's new Lawrence Mills Division in Lawrence, Mass., together with its Columbia Mills Division, now makes available *two* strategically located sources of supply from which to service your dryer felt needs—another step in Mount Vernon's continuing effort to provide the paper industry with the finest dryer felt service anywhere. Ask for these outstanding Mount Vernon brands:

From The Columbia Mills Division:

RICHLAND TRIPLEX heavy-duty, all-purpose dryer felts
WOODBERRY 887 reinforced dryer felts
RAYCORE 33 asbestos reinforced dryer felts
RAYCORE C-171 smooth-faced dryer felts
C-203 full-faced asbestos dryer felts

From The Lawrence Mills Division:

SIAMESE 135 general purpose duplex dryer felts
TOUR BOSS lighter weight duplex dryer felts
RAMESES extremely fine-faced dryer felts

PRE-STRETCHED—All Mount Vernon dryer felts are now available pre-stretched and pre-shrunk, with or without clipper seams.

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Mount Vernon Mills, inc.

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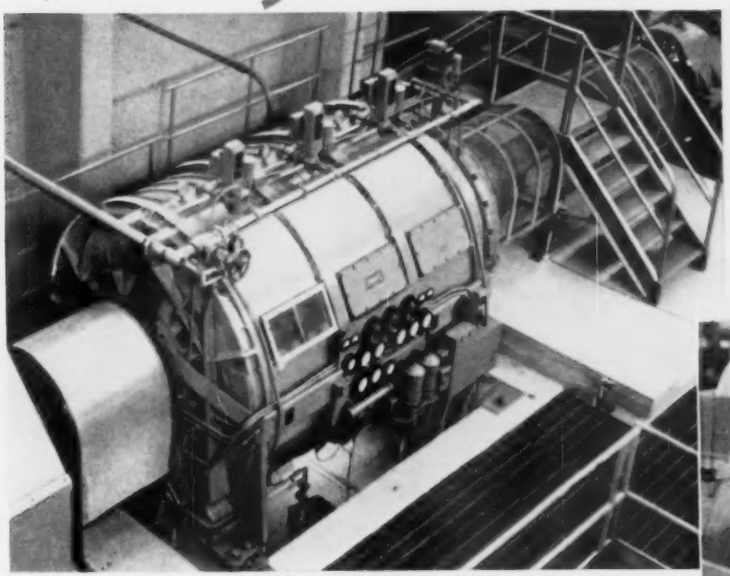
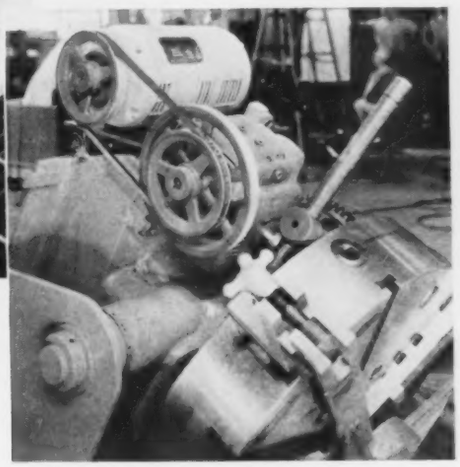


OR

1/4 HORSEPOWER



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Eddy-Current Equipment Can Solve Your Adjustable Speed Drive Problem

Write today for illustrated bulletins describing Dynamatic Eddy-Current Couplings and Drives—the modern method of speed control.

Need a big 20,000 horsepower drive? Or a compact, low-cost 1/4 horsepower drive? For either requirement—or for any of the thousand-and-one applications between these extremes—Dynamatic Eddy-Current Drives, Couplings, and Brakes provide the ideal solution to difficult speed or torque control problems. Their efficiency and economy are being proven every day in every major industry—in both plant equipment and end product applications. Dynamatic equipment offers such important advantages as instantaneous response, infinitely adjustable speed control, wide speed range, quiet operation, low power loss, low maintenance costs, and adjustable speed from an AC power source.

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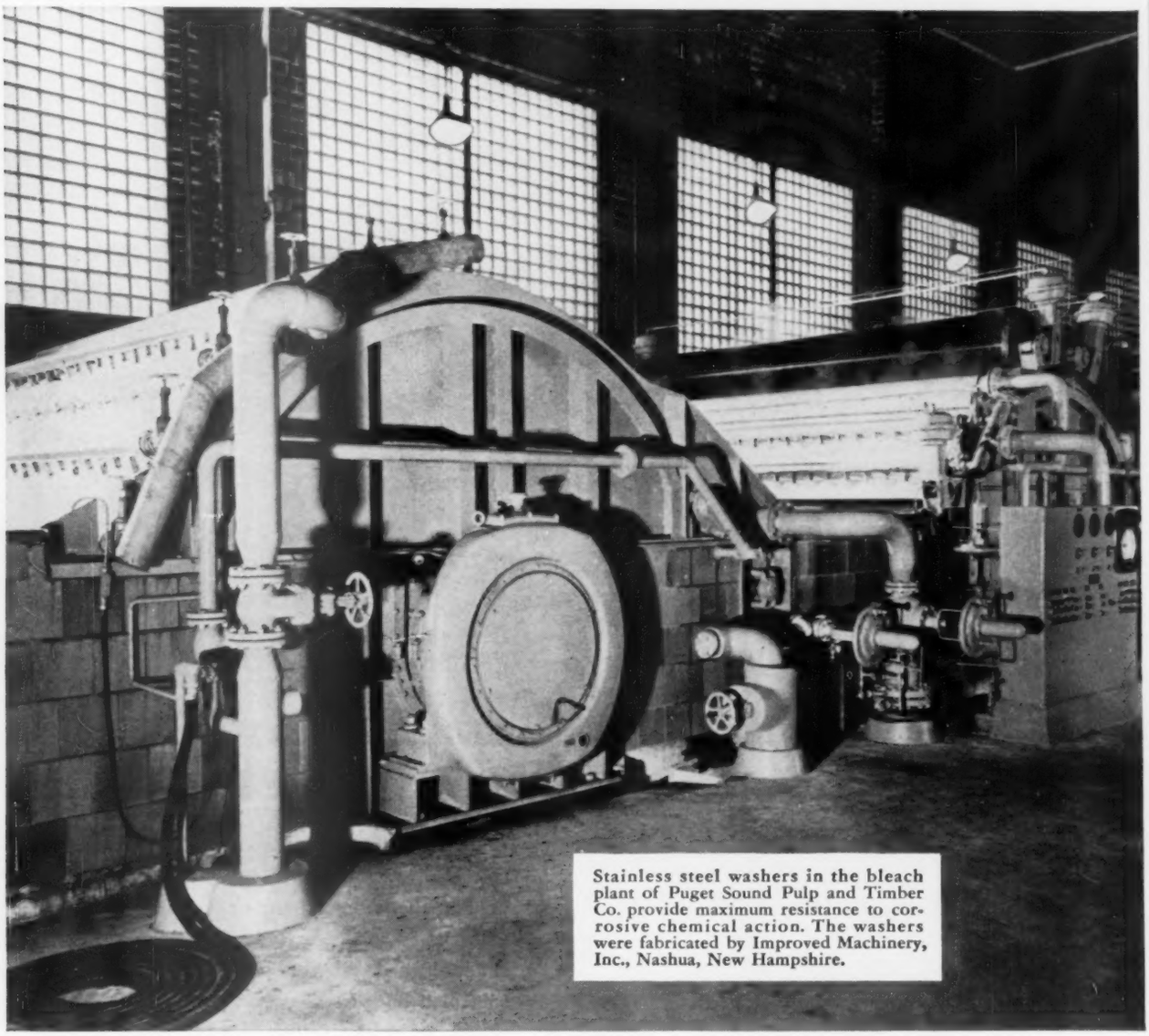
Pulp Washing in



Stainless steel washers in the bleach plant of Puget Sound Pulp and Timber Co. provide maximum resistance to corrosive chemical action. The washers were fabricated by Improved Machinery, Inc., Nashua, New Hampshire.

REPUBLIC

REPUBLIC STEEL

World's Widest Range of Standard Steels

STAINLESS STEEL

safeguards quality, keeps costs in line, assures continuous production

At Puget Sound Pulp and Timber Company, Bellingham, Washington, a combination of long experience, fine raw materials, and modern equipment results in a superior pulp product.

The chlorination and hypochlorite washers, shown at left, are installed at Puget Sound's bleach plant. They are indicative of the Company's widespread use of modern stainless steel equipment. No other construction material offers a combination of qualities and physical properties so essential to the mechanical and chemical stages of pulp making and processing.

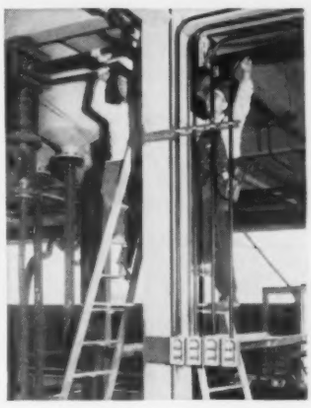
Stainless steel safeguards pulp quality. Stainless steel is solid. It has no applied surface to crack, chip, flake or peel. There is no danger of metallic contamination. Stainless is inert to most chemicals and chemical compounds. It does not add unwanted elements to spoil product quality. It never takes anything away.

Stainless steel keeps costs in line. Stainless is easy to clean and keep clean. Usually, a simple flushing with water or diluted acid solution brings stainless steel back to sparkling cleanliness. Stainless steel offers the highest resistance to corrosion of any commercial metal currently being used for pulp and paper making. As a result, it provides substantial savings in maintenance and replacement costs. Stainless equipment is an investment in long-range savings.

Stainless steel assures continuous production. In addition to its outstanding corrosion-resistance, stainless steel offers "bonus benefits" in the form of high strength, heat-resistance, abrasion-resistance. The exceptionally high strength of stainless takes stress and vibration in stride. Stainless equipment resists scaling at high temperatures. Possesses high creep-strength. Shrugs off abrasion. Your original investment in stainless steel equipment will be returned many times over in the form of uninterrupted and profitable production.

Selecting the proper type of stainless is extremely important. Republic—world's largest producer of alloy and stainless steels—will help you make that selection. Our metallurgists are constantly working with processors and equipment builders in applying the many available Republic ENDURO Stainless Steel analyses to best advantage. May we help you? There's no obligation. Just mail the coupon.

KEEP PIPE COSTS IN LINE with tough, lightweight Republic Plastic Pipe. Blaw-Knox did in a cooling tower installation. Corrosive liquids were running up replacement costs. Piping lasted little more than a year. Other materials were tried, but initial costs proved too high. Then Blaw-Knox switched to Republic SRK—the corrosion-resistant plastic pipe that practically eliminates replacement costs. A similar job, installed three years ago, shows absolutely no signs of damage or wear. A substantial savings in material, installation and replacement cost was realized. Republic SRK is easily joined by simple solvent-welded sleeve-type fittings. Send coupon for complete facts.



GUARD AGAINST PRODUCTION SHUTDOWNS by protecting your electrical wiring systems with Republic ELECTRUNITE "Dekoron®-Coated" E.M.T.—the electrical raceway that shrugs off corrosion. A tough coating of polyethylene encases lightweight, strong ELECTRUNITE® E.M.T. in an end-to-end armor that is impervious to excessive moisture and corrosive fumes. It can be cut to length and bent to fit as easily as standard E.M.T. conduit. Also available on hot galvanized rigid steel conduit. Joints are protected by polyethylene or vinyl-backed electrical tapes. Contact your local electrical distributor. Or mail us the coupon for more details.

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Send more information on:
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They are very well constructed . . .
They are easy to operate. . . a pleasure to work with.

The METTLER precision balance, type K-7T, is an excellent example of such a truly modern balance. It is fast, sturdy, compact, easy to use, and above all, reliable. It has a taring device, which is fast and simple and lets you compensate for any container weighing up to 100 g. Capacity: 800 grams. Built-in mechanical weights: 700 grams. Range of optical scale: 100 grams, with scale divisions of 0.1 g. Precision: ± 0.03 grams.

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Let us show you what METTLER balances can do for you. Write to us today for our complete file on METTLER balances.

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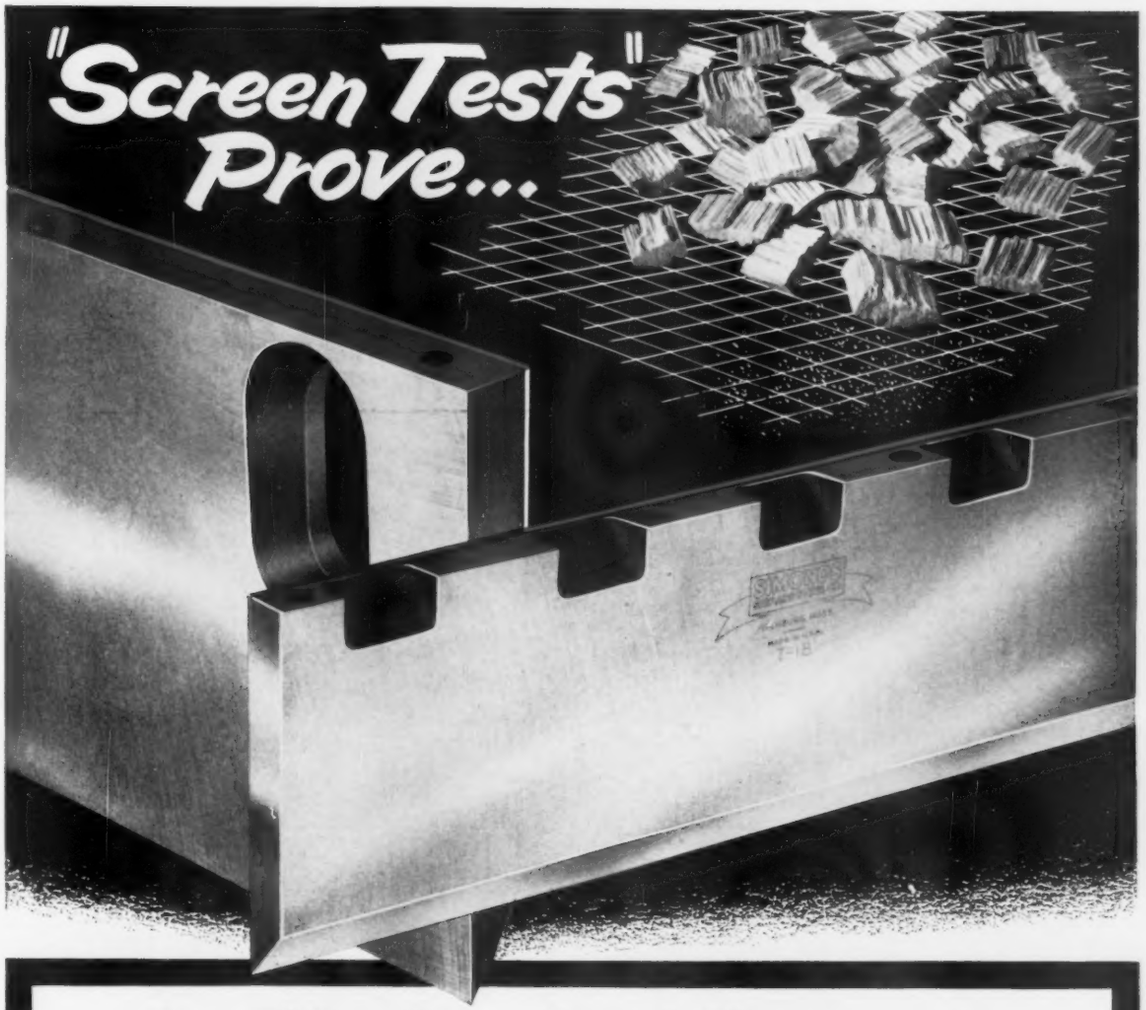

For Chips in Good Shape — use SIMONDS T-18 CHIPPER KNIVES

More usable chips with less dust through the screens means a lower percentage of waste, greater chip yield and more efficient woodroom operation.

You get this with Simonds T-18 Steel Knives because they are extra tough, take high speeds and heavy cuts, have extra resistance to dulling which causes bruised chips and excess dust.

Put Simonds T-18 Knives on the job and *your* screen tests will show more and better chips, less dust, LOWER COST CUTTING.

125 years of growth 1832-1957

SIMONDS SAW AND STEEL CO.
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7 BIG REASONS WHY

Bingham CIRCULATING PUMPS

1. **"Double Volute"** permits use of special over-hung impellers for handling pumpage containing large volumes of *entrained* air.

2. **Extra case strength** resulting from tension member (T) in the **"Double Volute"** casing.

3. **No dilution.** Hydraulic Radial Balance resulting from "Double Volute" design permits shaft to rotate on true center reducing stuffingbox leakage to a minimum.

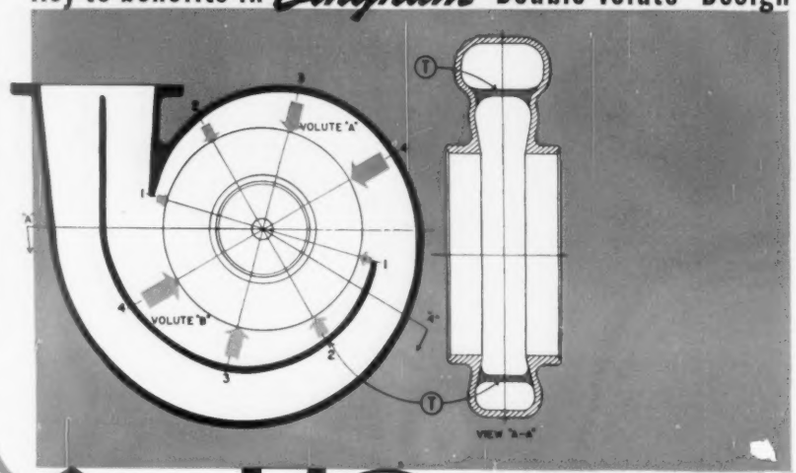
4. **Mechanical Seals.** Hydraulic Radial Balance permits mechanical seals to establish and maintain a uniform track between the contacting faces, thereby insuring long life and trouble-free service.

5. **"Double Volute"** construction eliminates "side push" of rotating element, reducing maintenance of rotating and stationary parts to a minimum.

6. **Unit type bearing** and rotating assembly is easily removable for inspection or repair without disturbing piping or driver.

7. **Spring supported "Floating Base"** assures alignment of pump and driver and protects pump from pipe strains due to extreme temperature changes in Digester Circulating Systems.

Key to benefits in *Bingham* "Double Volute" Design



No "Side Push". Diagram of a "Double Volute" single discharge case of single-stage pump (above) showing the equal pressures on the opposite sides of impeller, insuring low maintenance.

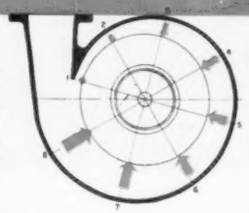


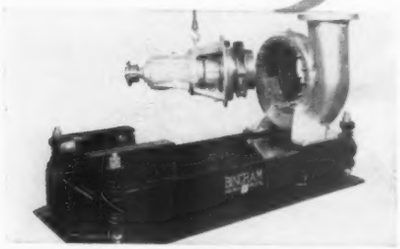
Diagram of "Single Volute" pump case (left) showing unequal pressure at opposite points around the periphery of the impeller. These unequal pressures cause "SIDE-PUSH" on the rotating elements, causing wear of rotating parts and, frequently, high maintenance.

In leading pulp mills throughout the world today, Bingham "Double Volute" Digester Circulating Pumps are selected as standard equipment because of their consistent record over the years for continuous operation with minimum maintenance.

The BINGHAM Circulating Pump illustrated below has established an enviable record throughout the industry, for circulating cooking liquors (sulphite or sulphate). The "Double Volute" design of this pump produces hydraulic radial balance which insures the shaft rotating on true center thus reducing stuffingbox leakage with corresponding dilution of the cooking liquor to a minimum.

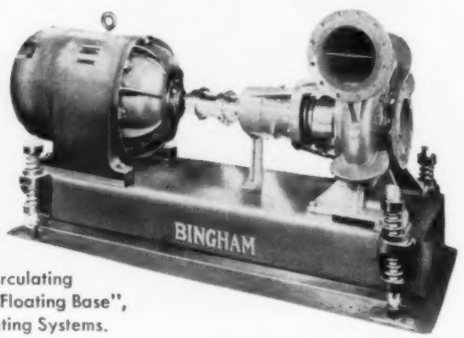
All BINGHAM Digester Circulating Pumps are mounted on a spring supported "Floating Base" which assures permanent alignment of pump and driver, and protection of pump from pipe strains common to Digester Circulating Systems, due to rapid and extreme temperature changes.

Bingham "Double Volute" Pumps will best serve your pulp and paper mill operations, as they are now serving leading pulp and paper mills everywhere. Write to your nearest Bingham office for "Double Volute" Bulletin, or send data on your pumping problem.



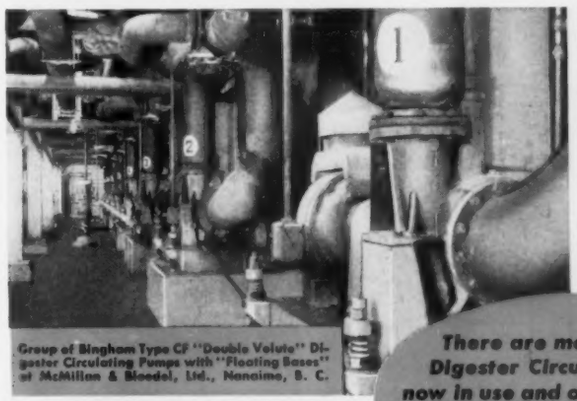
Bingham Type CF Circulating Pumps feature unit type bearing and rotating assembly which is easily removable for inspection or repair.

EASY ACCESSIBILITY

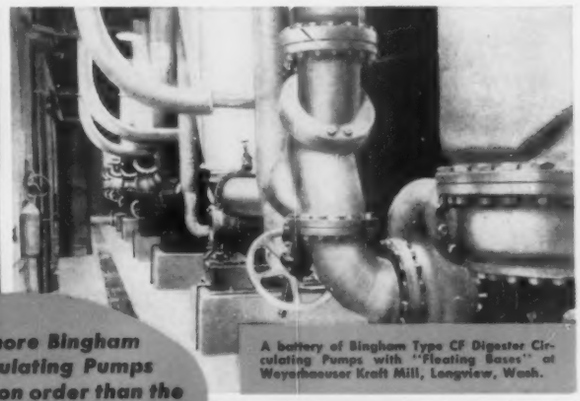


Bingham Type CF "Double Volute" Circulating Pump mounted on "Floating Base", for Digester Circulating Systems.

"DOUBLE VOLUTE" DIGESTER ARE USED THROUGHOUT THE WORLD

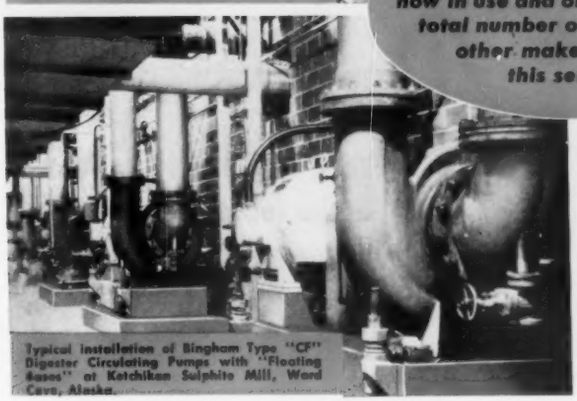


Group of Bingham Type CF "Double Volute" Digester Circulating Pumps with "Floating Bases" at McMillan & Bloedel, Ltd., Nanaimo, B. C.

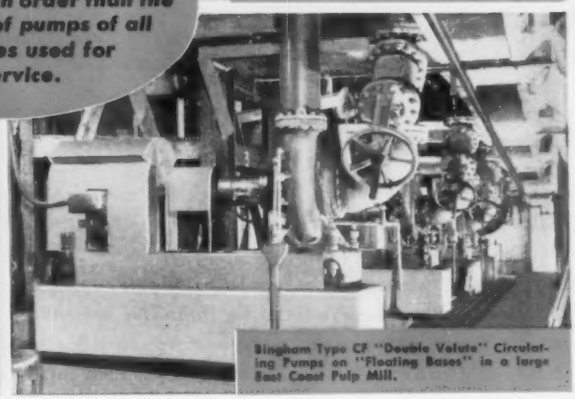


A battery of Bingham Type CF Digester Circulating Pumps with "Floating Bases" at Weyerhaeuser Kraft Mill, Longview, Wash.

There are more Bingham Digester Circulating Pumps now in use and on order than the total number of pumps of all other makes used for this service.



Typical installation of Bingham Type "CF" Digester Circulating Pumps with "Floating Bases" at Ketchikan Sulphite Mill, Ward Cove, Alaska.



Bingham Type CF "Double Volute" Circulating Pumps on "Floating Bases" in a large East Coast Pulp Mill.

New Major Mills recently placed in operation, or currently under construction, equipped with Bingham "Double Volute" Digester Circulating Pumps mounted on Floating Bases:

Alaska Pine & Cellulose, Ltd.
Port Alice, B. C.

B. C. Forest Products, Ltd.
Crofton, B. C.

Buckeye Cellulose Company
Foley, Florida

Columbia Cellulose Corp.
Prince Rupert, B. C.

Container Corporation
Brewton, Alabama

Companhia Portuguesa de Cellulose
Lisbon, Portugal

Marathon Southern Corp.
Naheola, Alabama

Nekoosa-Edwards
Nekoosa, Wisconsin

Eastern Corp.
Lincoln, Maine

P. H. Glatfelter Co.
Spring Grove, Pennsylvania

Crown Zellerbach Paper Co.
Camas, Wash.; West Linn, St. Helens, Ore.

Cia Industrial de Atenquique
Atenquique, Mexico

Gulf State Paper Company
Demopolis, Alabama

International Paper Company
Camden, Arkansas

Kajaani Oy., Kajaani, Finland

J. S. Nicholaiewsky
Sao Paulo, Brazil

Northwestern Pulp and Paper Co.
Hinton, Alberta

Rayonier, Inc.
Jesup, Ga.; Port Angeles, Shelton, Hoquiam, Wash.; Fernandina, Florida

Scott Paper Company
Everett, Washington

Weyerhaeuser Timber Co.
Everett, Longview & Cosmopolis, Washington; Springfield, Oregon

Tasman Pulp & Paper
Auckland, New Zealand

Westminster Paper Company
Westminster, B. C.

Crown Zellerbach Paper Co.
Duncan Bay, B. C.

East Texas Pulp & Paper Co.
Evadale, Texas

Ketchikan Pulp & Paper Co.
Ward Cove, Alaska

MacMillan & Bloedel, Ltd.
Nanaimo, Alberni, B. C.

Powell River Paper Company
Powell River, B. C.

Bingham SINCE 1921

DOUBLE VOLUTE PUMPS RADIAL BALANCE

BINGHAM PUMP COMPANY
General Offices: 2800 N.W. Front Avenue, Portland 10, Oregon
Factories: Portland, Ore. • Vancouver, B. C., Canada

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No long and costly "down time" involved

Motors can be interchanged or replaced *in minutes* with the all-steel, All-Motor type FALK Motoreducer. No long and costly "down time" is involved in making the change!

Best of all, replacement is not limited to original make of motor—new NEMA frames may be substituted for old. This versatile Motoreducer operates with any make, speed or type of standard foot-mounted motor within its AGMA rating. No modification, no special shaft, no "partial" motor required.

In addition to unmatched motor interchangeability, this dependable gear drive—the "work horse of industry"—offers: widest choice of output-shaft position (horizontal, vertical, right-angle)...any output-shaft connection...any mounting, including wall and ceiling...standard speed range from 1.5 rpm to 1430 rpm. All these advantages, plus proved efficiency, low maintenance and extra-long life, make the All-Motor type FALK Motoreducer your best buy for any job requirement.

Furnished in sizes up to 75 hp with any make, style or type of motor; or, *without a motor if desired.* FALK Motoreducers are available from convenient factory, field or distributor stocks, from coast to coast.

Write for Bulletin 3100

THE FALK CORPORATION, MILWAUKEE, WISCONSIN

MANUFACTURERS OF:

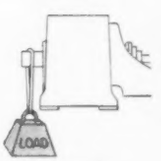
- Motoreducers
- Speed Reducers
- Flexible Couplings
- Shaft Mounted Drives
- High Speed Drives
- Special Gear Drives
- Single Helical Gears
- Herringbone Gears
- Marine Drives
- Steel Castings
- Weldments
- Contract Machining

FALK

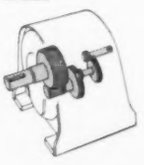
...a good name in industry

FALK "IN-BUILT" FACTORS assure full dependability—better service—longer life

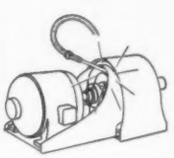
ALL-STEEL HOUSINGS
Rugged, strong, rigid ...all parts heavy steel plate, formed and welded in the Falk Weld Shop.



LARGE OVERHUNG LOAD CAPACITY
Large shafts, oversize bearings...rigid mountings with wide bearing spans to handle maximum loads.



PRECISION GEARING
Heat-treated alloy steel gearing, precision cut and shaved after heat treatment to eliminate distortion.



SEALED HOUSINGS
Splashproof, dustproof, oiltight. Dual closures and one-way vents keep oil in, dust and moisture out.

POWELL RIVER UNBLEACHED SULPHITE PULP

★STRENGTH

★COLOR

★CLEANLINESS

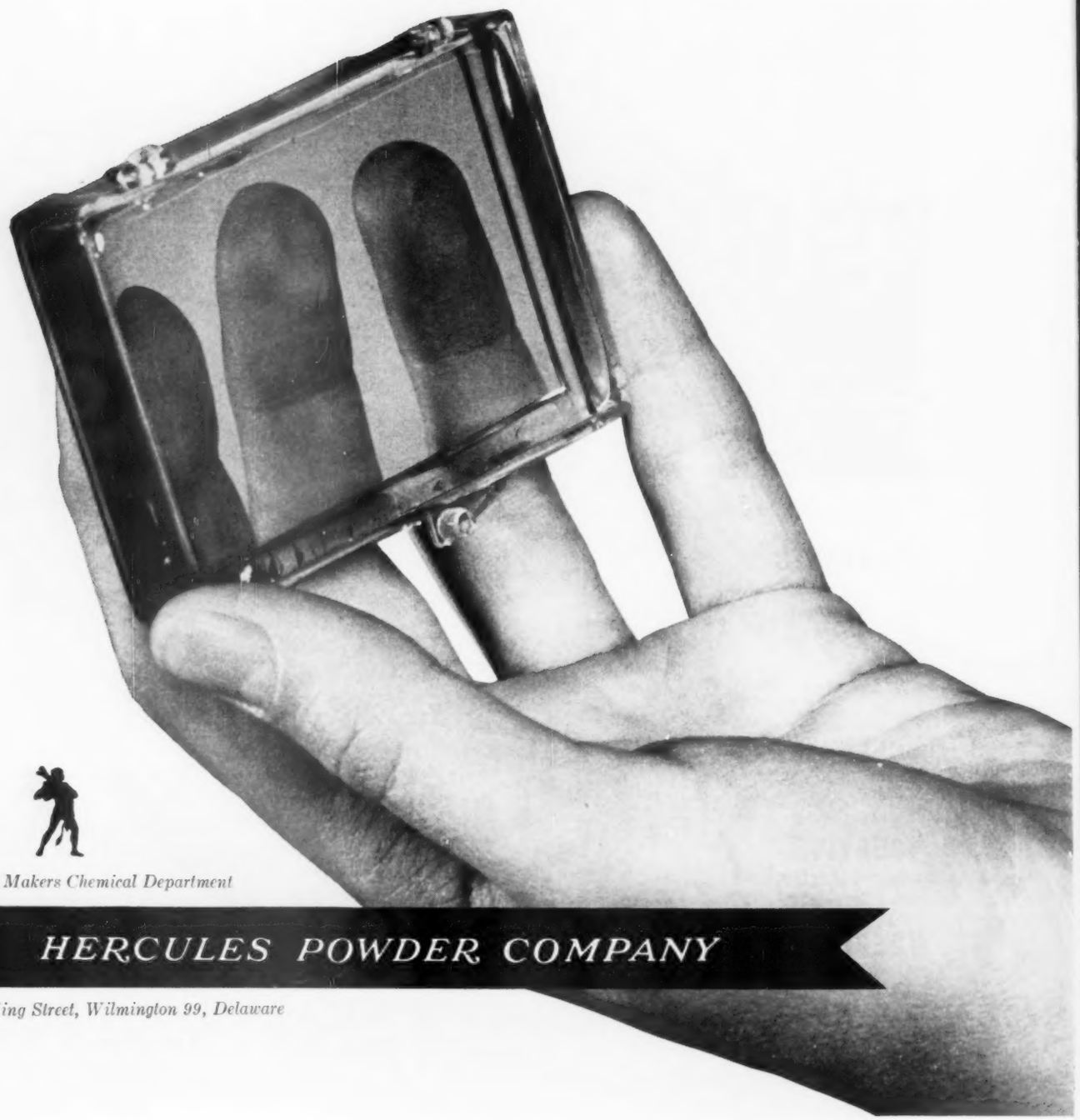
★SERVICE

★DEPENDABLE SUPPLY

★POWELL RIVER SALES COMPANY LIMITED
STANDARD BUILDING VANCOUVER, B. C.

*There must be reasons for leadership**

ANOTHER FIRST BY HERCULES: TOP-QUALITY PAPER SIZES FROM A NEW ROSIN—



Paper Makers Chemical Department

HERCULES POWDER COMPANY

965 King Street, Wilmington 99, Delaware

PPS7-2

—PAMITE**

Introducing Pamite—a new pale rosin (X to WG) that assures the paper industry of a continuing supply of top-quality sizing materials from Hercules.

Pamite is manufactured by a closely controlled chemical process at our new multimillion-dollar tall oil distillation plants.

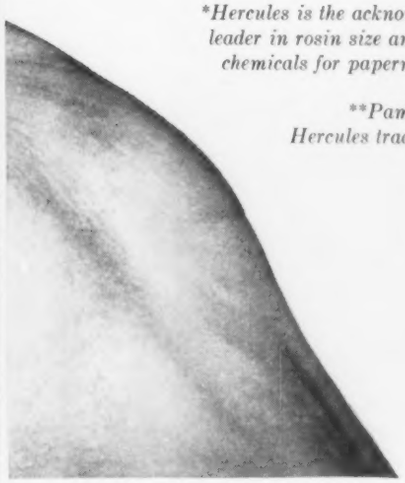
Sizes made from Pamite have superior efficiency, high brightness, low foaming properties, and excellent handling characteristics.

Because of Pamite's uniform chemical and physical properties, this new rosin is particularly suited for Hercules' complete line of rosin sizes, regular or fortified.

If you are not already using size made from Pamite, we would welcome your inquiry.

**Hercules is the acknowledged leader in rosin size and other chemicals for papermaking.*

***Pamite is a Hercules trademark.*



SOME REASONS FOR HERCULES LEADERSHIP

UNEQUALED TECHNICAL SERVICE
A staff of more than 50 technically trained men are thoroughly grounded in the cumulative experience of 40 years' mill and laboratory service to the paper industry. Such company experience results in an understanding of the requirements of the paper industry and is reflected in the variety and dependable quality of the products designed to meet them. One of these men is always as near as your telephone.

FORWARD-LOOKING CHEMICALS
From Hercules research come new products designed to anticipate your needs for improved chemical materials. Whether it is a new grade of size based on rosin or a completely new concept, you can look to Hercules for progressive leadership.

UNMATCHED DISTRIBUTION FACILITIES
Hercules maintains by far the largest number of plants and strategically-located distribution points of any rosin size manufacturer. This is your assurance that the product you want will be delivered when and where you want it.

A SIZE FOR EVERY NEED
Hercules' large number of sizing grades means there is one available to meet practically any requirement. For unusual problems, Hercules can formulate a custom-made grade to fit your specific need. Hercules assures you the lowest possible sizing cost by recommending the right grade for your specific needs.

PACE-SETTING RESEARCH
The most extensive research and technical service facilities devoted exclusively to papermaking are maintained by Hercules. The Hercules laboratories are always at the disposal of customers in helping to solve sizing and other papermaking problems.

HERCULES HELPS MILL OPERATIONS
Hercules has assisted in the industry's progress by designing mechanical improvements and testing equipment. The development and extensive use of the Hercules Automatic Emulsifier, for example, has resulted in major economies in the handling of rosin size.

VARIETY OF PRODUCTS
Hercules is also a leading source of other high-quality papermaking chemicals. Wax emulsions, wet strength resins, defoamers—to name but a few made by Hercules—incorporate the same degree of skilled processing improvements that are found in Hercules'® rosin sizes.

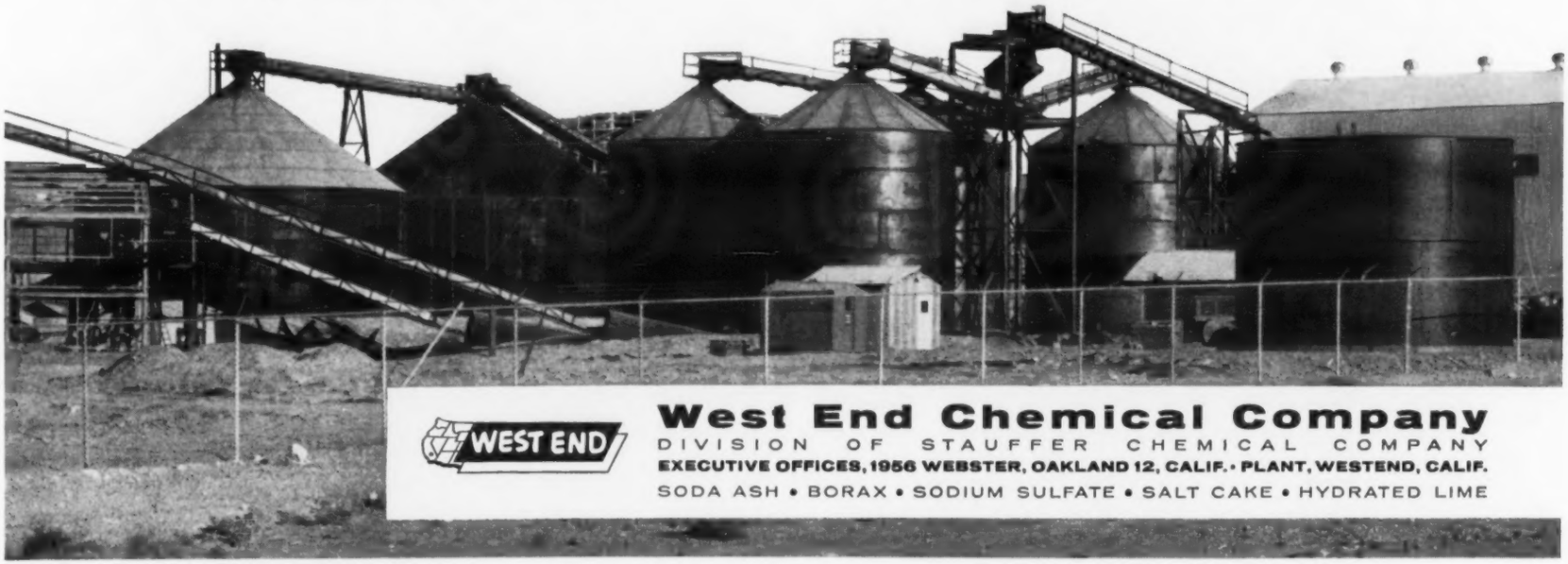
DEPENDABLE SOURCE OF SUPPLY
Hercules' many facilities for producing rosin and rosin size assure you of a thoroughly dependable source of supply.

SAVINGS IN SHIPPING
Hercules has pioneered many improvements in rosin size distribution. The freight and handling savings made possible through the introduction of dry size and higher solids paste size, both in tank truck and tank car shipments, are typical examples.

HERCULES POWDER COMPANY
INCORPORATED

...if you needed an extra 1,000 tons of West End SALT CAKE today, we'd have it for you...

Our customers generally schedule their requirements far in advance—sometimes for years—but on those occasions when additional quantities are needed unexpectedly, West End has the storage facilities to meet any emergency requirements promptly and easily.



WEST END

West End Chemical Company

DIVISION OF STAUFFER CHEMICAL COMPANY

EXECUTIVE OFFICES, 1956 WEBSTER, OAKLAND 12, CALIF. • PLANT, WESTEND, CALIF.

SODA ASH • BORAX • SODIUM SULFATE • SALT CAKE • HYDRATED LIME

Cascade

REVOLVING PAPER ROLL GRAB

Cuts Handling Costs for Weyerhaeuser

The Pulp Division, Weyerhaeuser Timber Company, Longview, Washington, reports it is extremely pleased with Cascade's new Revolving Paper Roll Grab. Cascade Roll Grabs offer real savings in man hours and actual dollars because of these advantages:

AUTOMATIC ADJUSTMENT FOR DIFFERENT ROLL SIZES – Drivers no longer dismount and position grab arm manually.

IMPROVED OPERATING EFFICIENCY Rugged construction reduces down-time due to clamp failure.

SURE, NON-SLIP HANDLING OF HEAVY, HIGH-FINISH ROLLS – No more culled stock due to dropping. Costly reprocessing is eliminated. Wrapper damage is rare.

FAST OPERATION IN COMPLETE SAFETY Driver confidence with the Cascade Roll Grab results in more rolls and more tons of paper handled per day.

Cascade's powerful rotator quickly and safely revolves rolls weighing up to 6,500 lbs. Pilot-operated check valves insure steady clamping pressure until operator releases load.

Driver confidence in Cascade Grabs pays dividends in lower handling costs.

Cascade's high torque permits off-center clamping and rotating of this 6,000 lb. roll for higher stacking.

Made in 3 models: 2000 lb., 4000 lb., 6500 lb. Roll Capacities

ONLY THE CASCADE REVOLVING PAPER ROLL GRAB CAN GIVE YOU ALL THESE ADVANTAGES

- **Highest Torque of Any Clamp Available.**
- **Speed of Rotation Precisely Controlled by Adjustable Hydraulic Fittings.**
- **Positive Clamping Pressure Insured by Pilot-operated Check Valves.**
- **No Manual Adjustment Required with Original Powered Swinging Arm.**
- **Rugged Construction, Replacement Parts Quickly Available, Easy to Service.**
- **Engineered to Adapt to Any Lift Truck.**

Literature and information available through the following manufacturers and their dealers:

Allis-Chalmers Mfg. Co.	Lamson-Mobilift Corp.
Automatic Transportation Co.	Lewis-Shepard Products, Inc.
Baker-Raulang Co.	Mercury Mfg. Co.
Barrett-Cravens Co.	Moto-Truc Co.
Clark Equipment Co.	Raymond Corp.
Colson Corp.	Revolvator Co.
Elwell-Parker Electric Co.	Towmotor Corp.
Hyster Co.	Transitier Truck Co.
Knickerbocker Co.	Yale & Towne Mfg. Co.

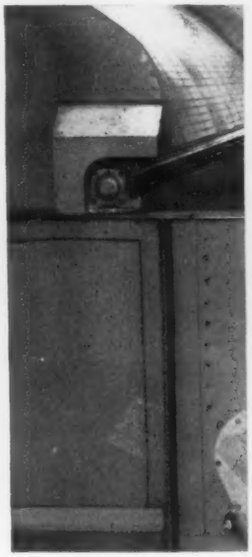
CASCADE MANUFACTURING CO.

Manufacturers of
A Complete Line of Hydraulically Actuated Lift Truck Attachments

New Oliver Brownstock Washing System

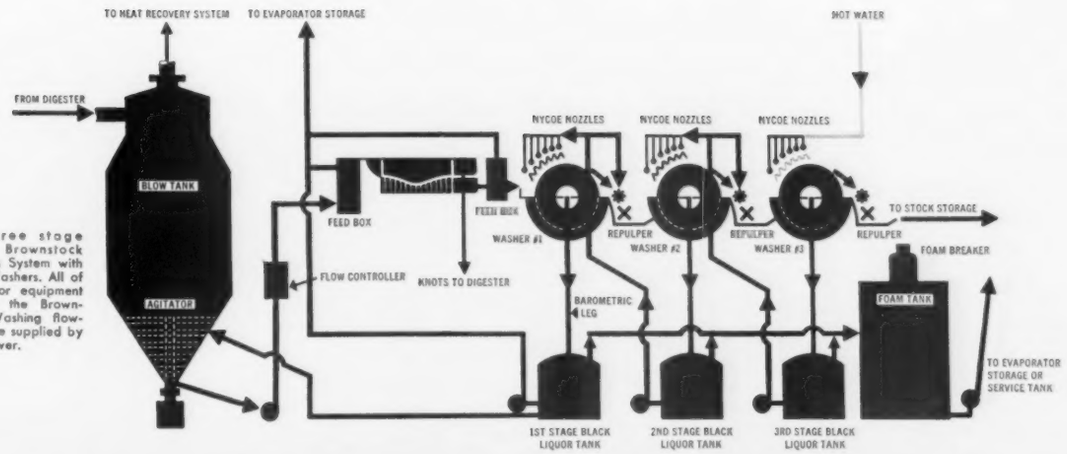
Plays Integral Role in Plant Expansion at Longview Fibre Company

An integral part of the new plant expansion program at Longview Fibre Company, Longview, Washington, is the new Oliver Brownstock Washing System. The D-O System contains many new features based upon knowledge gained from more than 35 years of designing, engineering, and servicing hundreds of washers in the pulp and paper field as well as thousands of filters in the process field in general. Among these distinctive features are: high efficiency; controlled pulp discharge; uniform sheet formation; high hydraulic capacity — up to 20,000 G.P.M.; and a wide range of filtering areas — from 200 to 722 square feet.

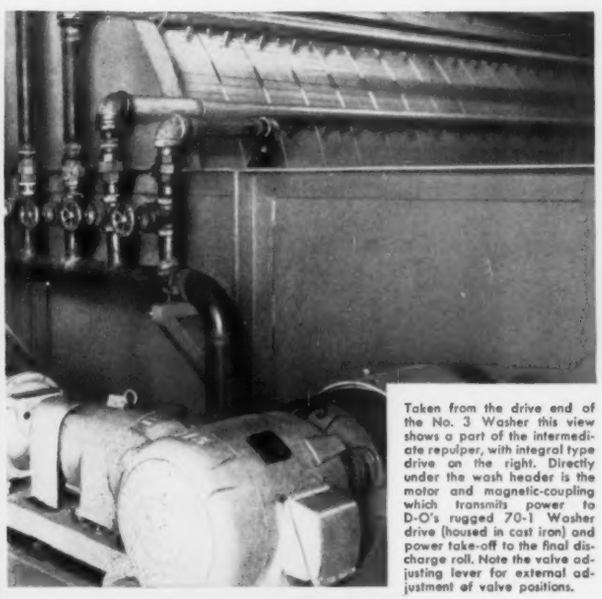


For more complete information on the Oliver Brownstock Washing System write for a copy of Bulletin No. 3303, Dorr-Oliver Incorporated, Stamford, Connecticut; or better still, let us send a Dorr-Oliver engineer to discuss your specific filtration or washing problem with you, placing at your disposal the wealth of information accumulated through our 35 years of Brownstock Washing experience.

DORR-OLIVER
INCORPORATED
WORLD-WIDE RESEARCH • ENGINEERING • EQUIPMENT
STAMFORD • CONNECTICUT • U S A

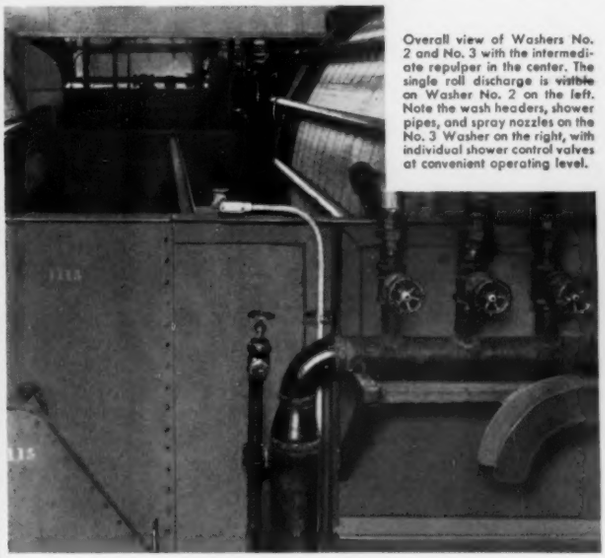


The three stage Oliver Brownstock Washing System with three Washers. All of the major equipment units in the Brownstock Washing flowsheet are supplied by Dorr-Oliver.

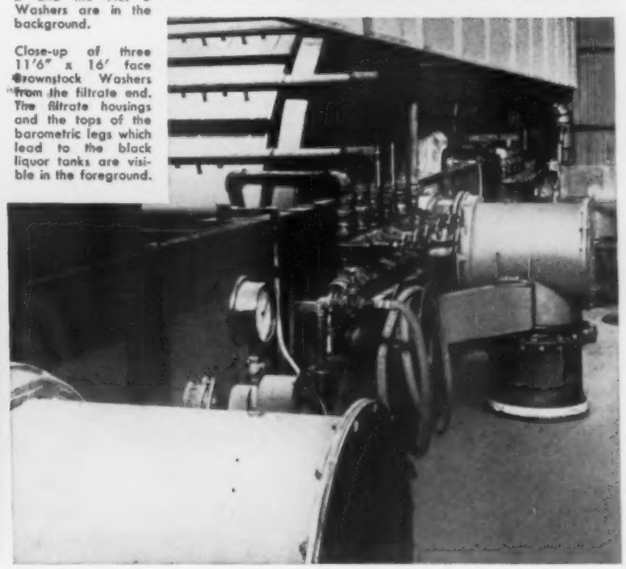


Taken from the drive end of the No. 3 Washer this view shows a part of the intermediate repulper, with integral type drive on the right. Directly under the wash header is the motor and magnetic-coupling which transmits power to D-O's rugged 70-1 Washer drive (housed in cast iron) and power take-off to the final discharge roll. Note the valve adjusting lever for external adjustment of valve positions.

General view of three Oliver Brownstock Washers at Longview Fibre Company, with the three operating consoles installed for easy operation. The control panel for the three knotters and the No. 1 Washer is in the foreground and the control panels for the No. 2 and the No. 3 Washers are in the background.



Overall view of Washers No. 2 and No. 3 with the intermediate repulper in the center. The single roll discharge is visible on Washer No. 2 on the left. Note the wash headers, shower pipes, and spray nozzles on the No. 3 Washer on the right, with individual shower control valves at convenient operating level.



Close-up of three 11'6" x 16' face Brownstock Washers from the filtrate end. The filtrate housings and the tops of the barometric legs which lead to the black liquor tanks are visible in the foreground.

Vorject with
Coretrap
Rejects Assembly

For
Cleaner Stock
with minimum
maintenance
in
Pulp Mills
or on
Paper
Machines

Nichols
Freeman
VORJECT®
Cleaner

Vorject with
Elutriator
Rejects Assembly

Coretrap rejects assembly used in all cases except for final system discharging to waste—
½" orifice controls rejects—
No air insuction—Water addition used only on elutriator assembly to control final rejects to waste.
Fibre losses .25% maximum

Unit in operation 16 months on dirty liner stock without expenditure of one cent for maintenance proves design superiority.
Systems in operation on paper machines, pulp mills, liner vats
Write for Bulletin No. 131

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70 Pine St., New York 5, N.Y.
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Representatives:
Douglas Robbins & Co., Minooka, Ill.
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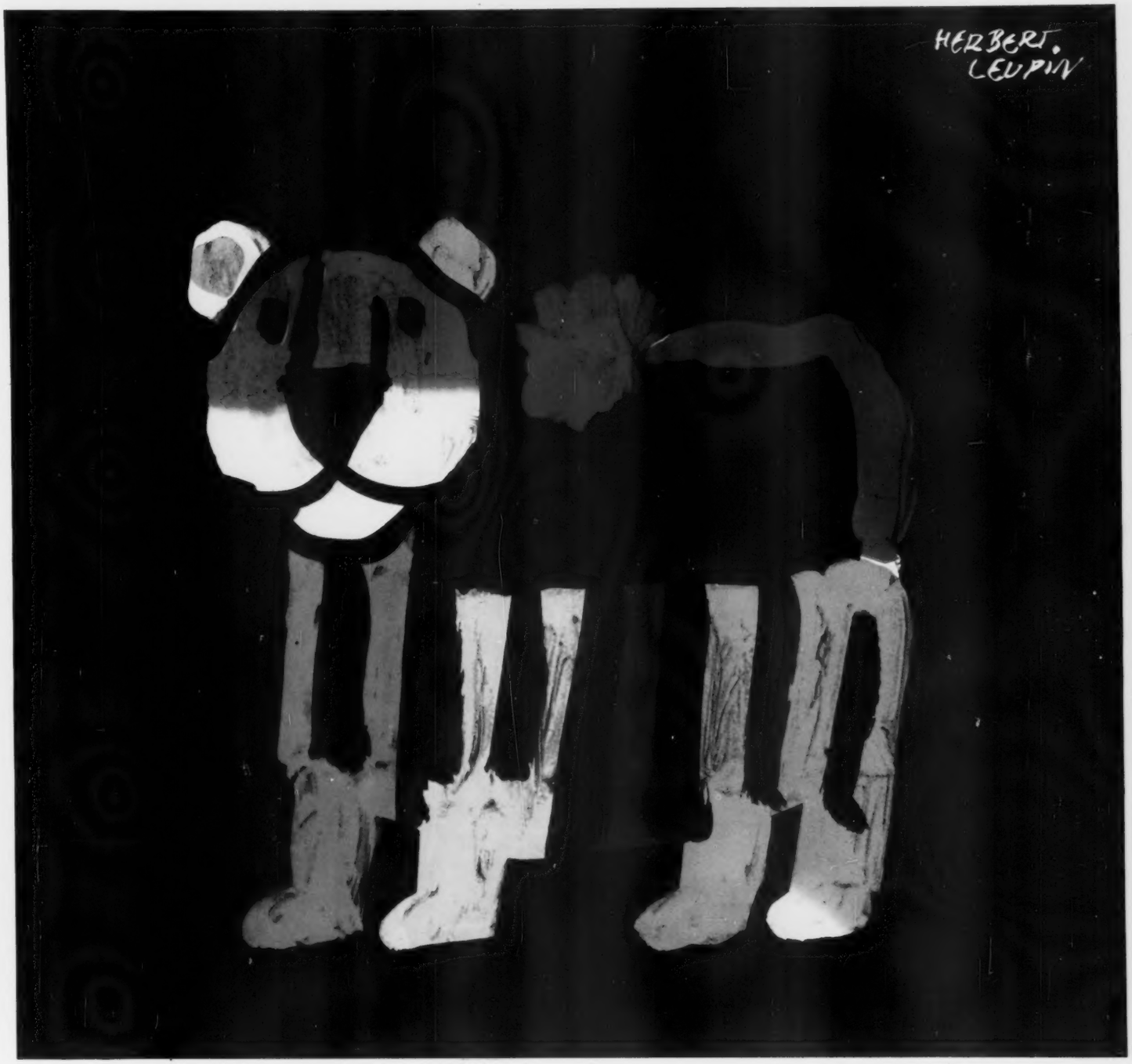
H. E. Ingalls, North Windham, Me.



Sandoz Leucophor BS Liquid... for brighter whites at lower cost

Applicable to all types of bleached pulp, and with great affinity for cellulose, Leucophor BS Liquid ... the Sandoz fluorescent white . . . provides a very even fluorescence over the entire surface. Use of Leucophor BS Liquid reduces preparation time, by-passing the waste motion in weighing and mixing. Practical mill runs have proved it the most satisfactory and economical fluorescent white available today.

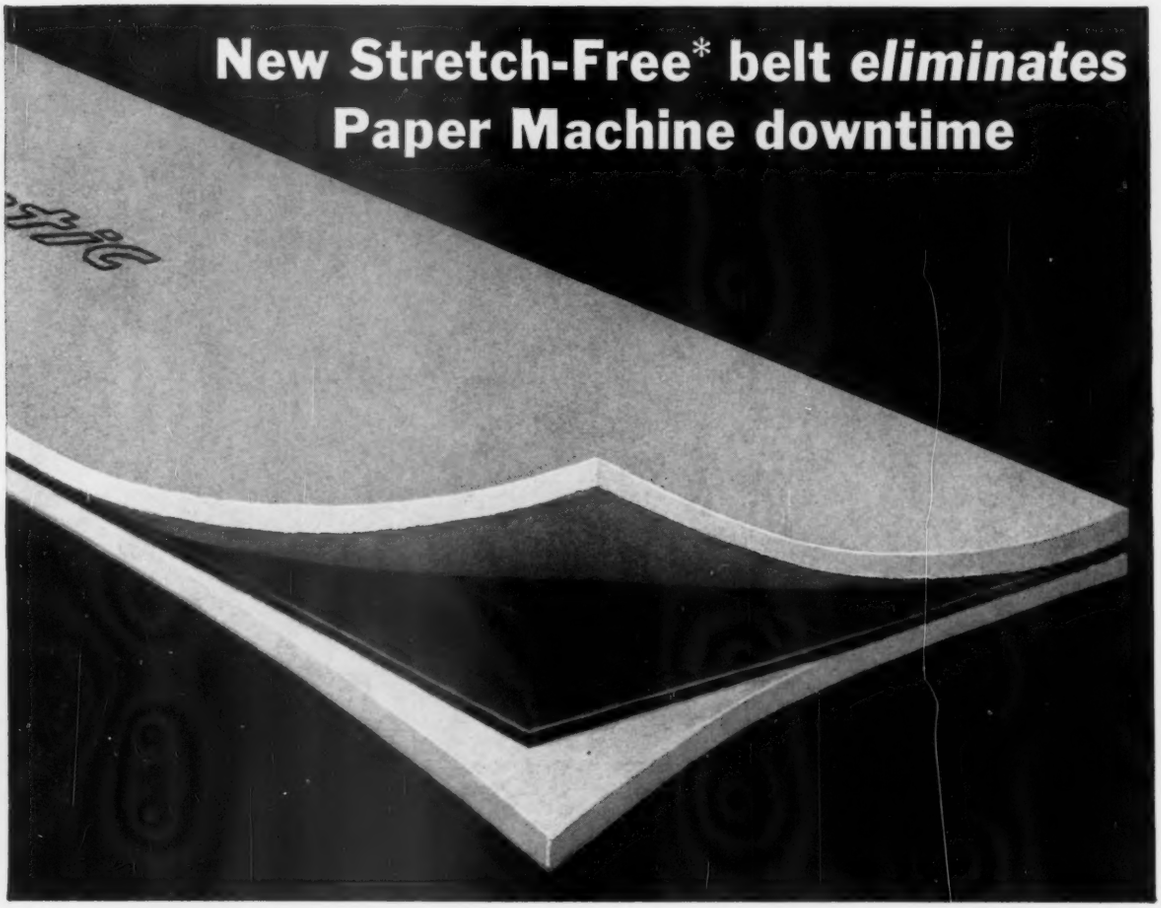
Over and above producing products of top quality, Sandoz offers special advantages to papermakers in terms of technical service. For full details on Sandoz service, or Sandoz Leucophor BS Liquid, write or call: SANDOZ, INC., 61-63 Van Dam Street, New York 13, N. Y., ALgonquin 5-1700.

SANDOZ

THINKS AHEAD WITH PAPER

SANDOZ

New Stretch-Free* belt *eliminates* Paper Machine downtime



with Tanastic

high tensile strength and true elasticity means no tension adjustment, no belt shortening

Rhoads Tanastic is just what many Mill Superintendents are looking for. Here is a new, reinforced flat belt combining the glove-like grip of leather with the super strength of plastic! Just look at these cost-cutting, field proved advantages!

1. Delivers a smooth flow of power and maintains constant draws *without tension adjustment.*
2. Excellent shock absorbing qualities and very high efficiency consistently pull the full load.
3. Widely adaptable Tanastic features capacities to 500 HP and over, with belt speeds to 10,000 f.p.m.
4. Resists water and moist operating conditions as well as deteriorating action of excessive machine oils. Temperature ranges between −60° to +160°F have no effect on Tanastic.
5. Tanastic is well-suited to the taper of cone pulleys because its high tensile strength and elasticity permit narrower belt widths. Excellent lateral rigidity of the plastic center withstands the action of shifters.

For the full story on amazing new Tanastic write J. E. Rhoads and Sons, 2100 W. 11th St., Wilmington 99, Del.

**An elastic belt will return to its original length after tension is released but a stretchy belt will remain permanently distended.*

2100 W. 11th St., Wilmington 99, Del.

Atlanta • New York • Chicago

RHOADS

INDUSTRIAL LEATHERS

fast, easy plug removal cuts cost of maintenance and down-time

You don't have to remove the bearings or packing boxes from the shaft when pulling the plug for refilling. Head, plug, shaft, bearings and packing boxes slide out quickly as a unit.

heavy, one-piece construction assures precise alignment, maximum strength and rigidity

BLACK-CLAWSON JORDANS

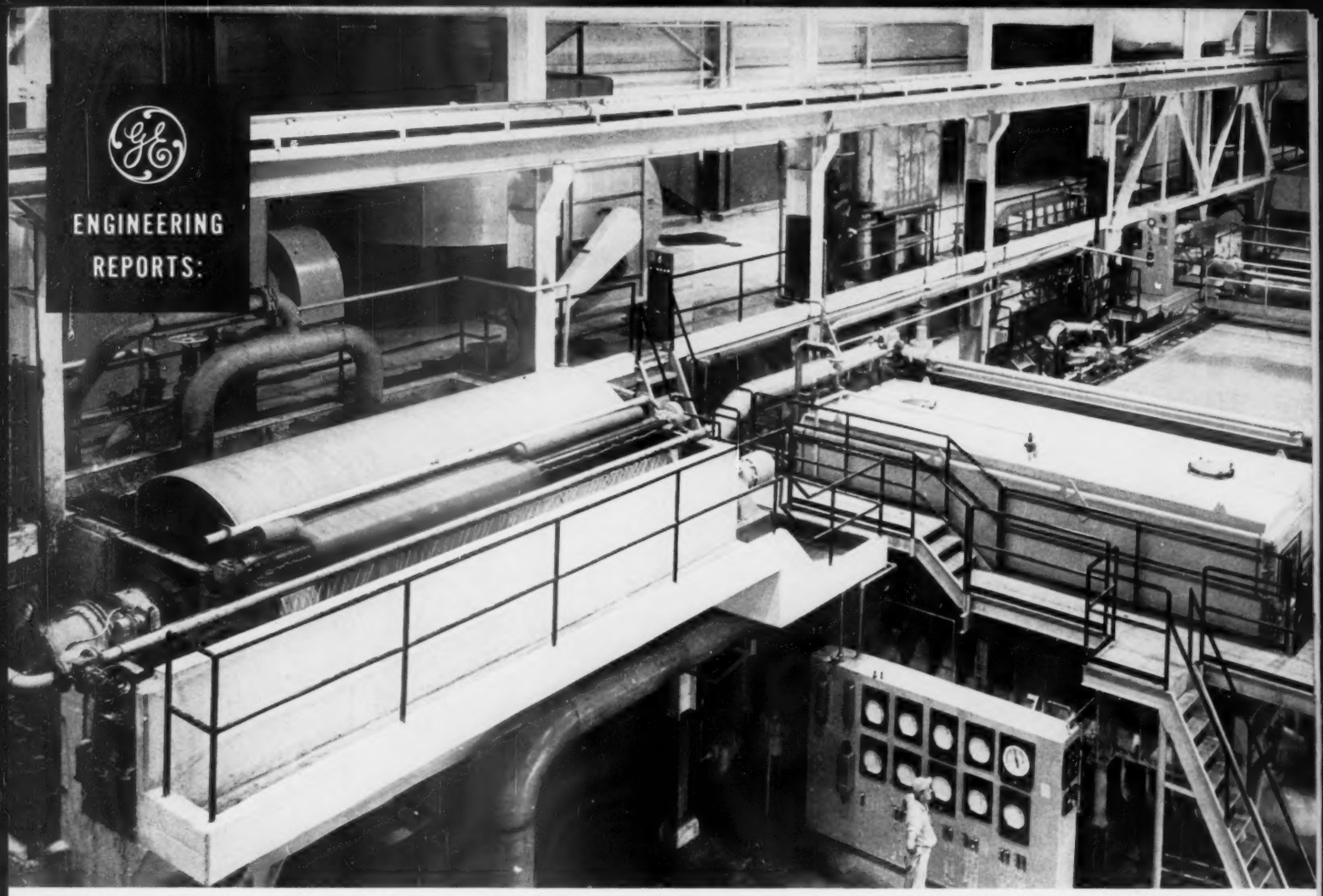
Solid, one-piece head and pedestal support are cast integral. Base, ribbed shell and drive end bearing support are cast in one heavy piece. All machining operations on this sturdy casting are accomplished at one time by use of a special fixture—radial and head end bores are concentric, thus assuring precise alignment.

Black-Clawson Jordans are built for pressures up to 125 lbs. Nine models available with or without Duotrol* automatic plug adjustment. Get the full story on the superior design and performance of Black-Clawson Jordans. Write to the Shartle Division. Ask for new Catalog 22-SB.

*Trademark

THE BLACK-CLAWSON COMPANY
SHARTLE DIVISION, MIDDLETOWN, OHIO

Executive Offices — 250 PARK AVE., NEW YORK, N. Y.
Pulp Mill Equipment — PANDIA DIVISION, Hamilton, Ohio
Paper and Board Machines — PAPER MACHINE DIVISION, Watertown, N. Y.
Converting Machinery — DILTS DIVISION, Fulton, N. Y.
Canadian Sales and Manufacture — BLACK-CLAWSON (CANADA) LTD., Montreal, P.Q., Canada
British-European Sales and Manufacture — BLACK-CLAWSON INTERNATIONAL LTD., London, England
District Sales Offices — Atlanta, Ga. • Downingtown, Pa. • Appleton, Wisc. • Portland, Ore.



LARGEST IN THE WEST, this 260-inch Fourdrinier in Crown-Zellerbach's new paper mill at Antioch, Calif. is 440 feet from head box to calender rolls. It is lineshaft-driven at a rated speed of 2500 fpm by a General Electric geared turbine, with G-E electric helper drives on the wet end and size press.

Providing 400 tons per day kraft and board capacity . . .

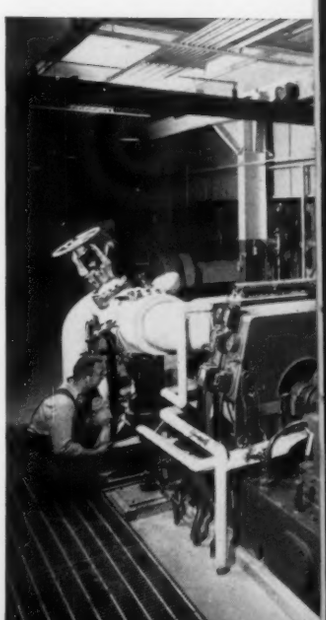
General Electric designed electrical system powers new Crown-Zellerbach Antioch mill

General Electric engineers co-ordinate mill's power and drive equipment, supervise installations, to meet needs of West's largest paper machine

Containing the largest paper machine in the West, Crown-Zellerbach's new $18½ million mill at Antioch, California—with a capacity of 400 tons per day of kraft and board—is part of an over-all expansion program of major proportions. The new mill will add 140,000 tons of paper annually to the company's capacity.

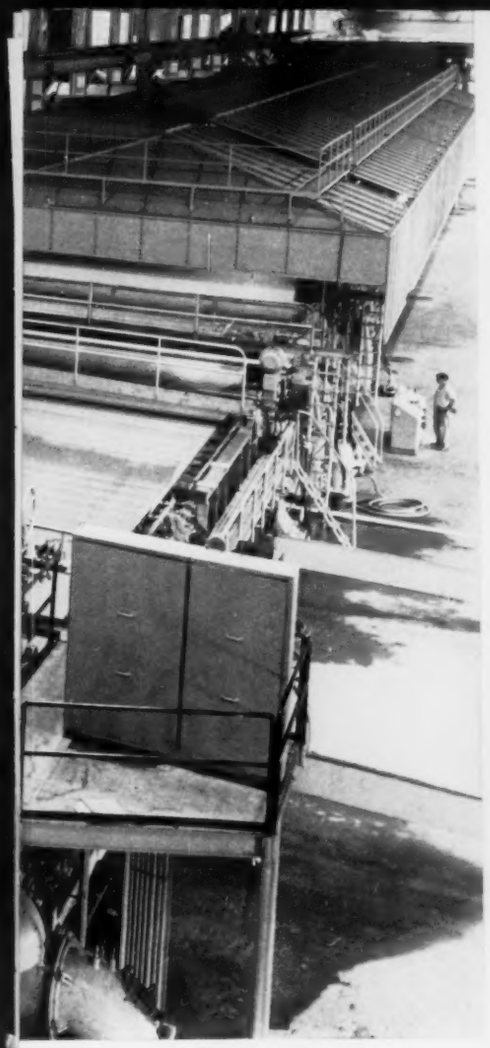
General Electric equipment and engineering services played a major part in achieving this addition. General Electric equipment was selected throughout to supply, distribute and control the power to keep production rolling. Co-ordination of the equipment into a flexible, easy-to-expand electrical system—designed to meet the mill's special needs—resulted from close co-operation between Crown-Zellerbach and General Electric application engineers. And careful supervision of the equipment's installation by General Electric field-service engineers helped meet mill construction schedules, expedited early start-up and profitable production. Only 4 months after completion, the mill is already producing near 100% of capacity.

To meet *your* specific production needs, too, General Electric engineering services can help design, equip and install a co-ordinated electrical system—from one-line diagram to on-time start-up. Early in your planning, call your nearest General Electric Apparatus Sales Office. Meanwhile, write for bulletins GEA-6508 on paper-mill drive systems and GEA-5521 on paper-mill power systems to General Electric Company, Section 655-18, Schenectady 5, New York.

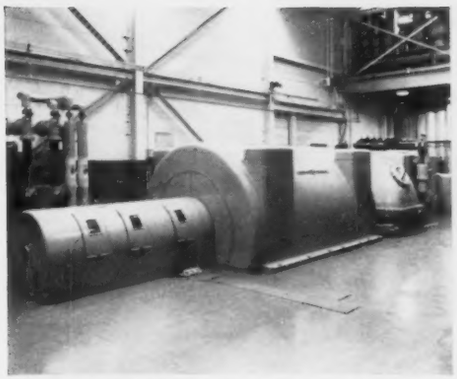


Engineered Electrical Systems for the Paper Industry

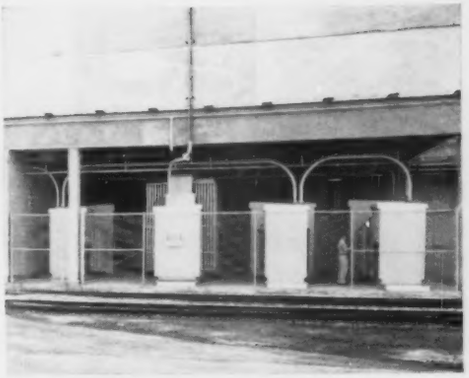
GENERAL ELECTRIC



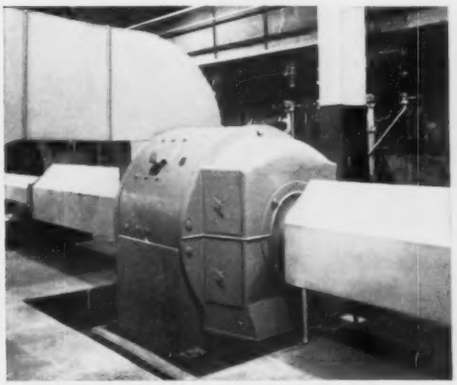
PRIME MOVER for the huge paper machine is this 2400-hp G-E geared turbine with a 6 to 1 speed range. New turbine governor holds speed constant to 1/10 of 1% of rated speed at all points over the speed range, to help provide higher quality production.



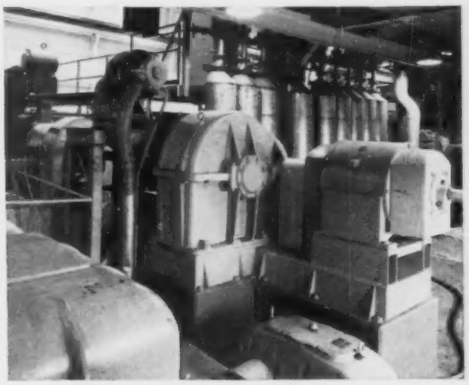
HIGH-EFFICIENCY G-E 12,500-kw turbine-generator produces mill's power, and extracts up to 200,000 pounds of steam per hour for process use.



SYSTEM FLEXIBILITY is provided by 15 G-E load-center unit substations, which can easily be supplemented to match the mill's load-change needs.

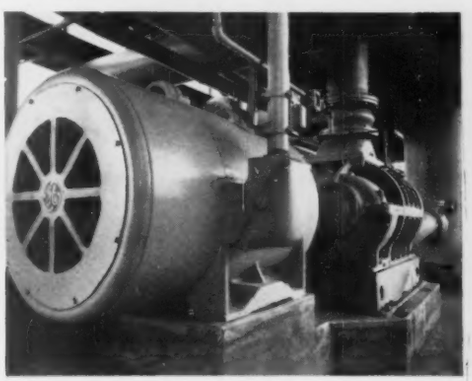


DC POWER SOURCE for helper drive is provided by enclosed, separately-ventilated, lineshaft-driven 400-kw generator.

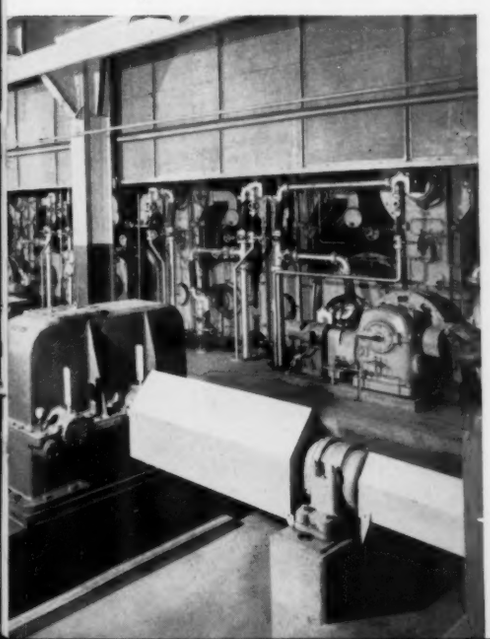


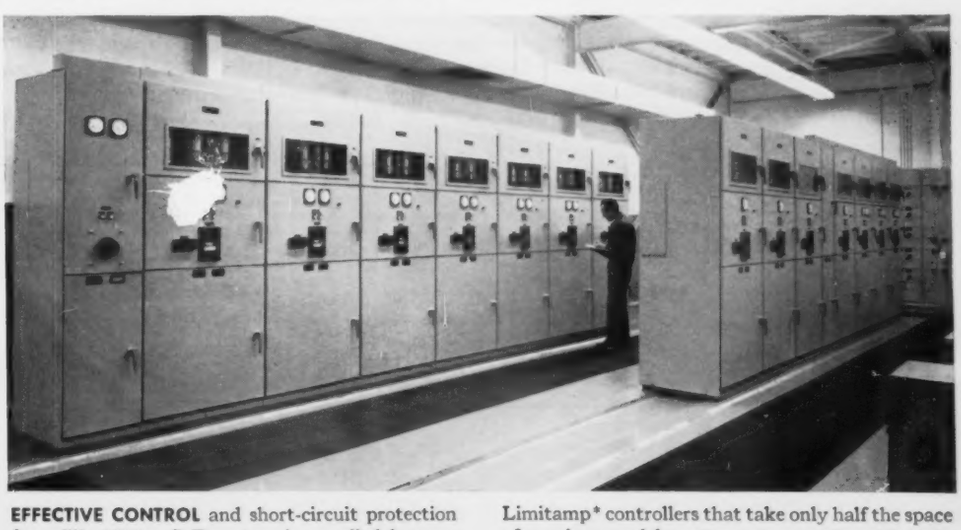
LONGER WIRE LIFE is obtained in mill by amplistat-regulated General Electric helper drives, with three 150-hp d-c Fourdrinier helper motors.

BETTER PROTECTION against physical damage is provided by the cast-iron frame construction of these three 200-hp Tri-Clad* '55' pump motors.

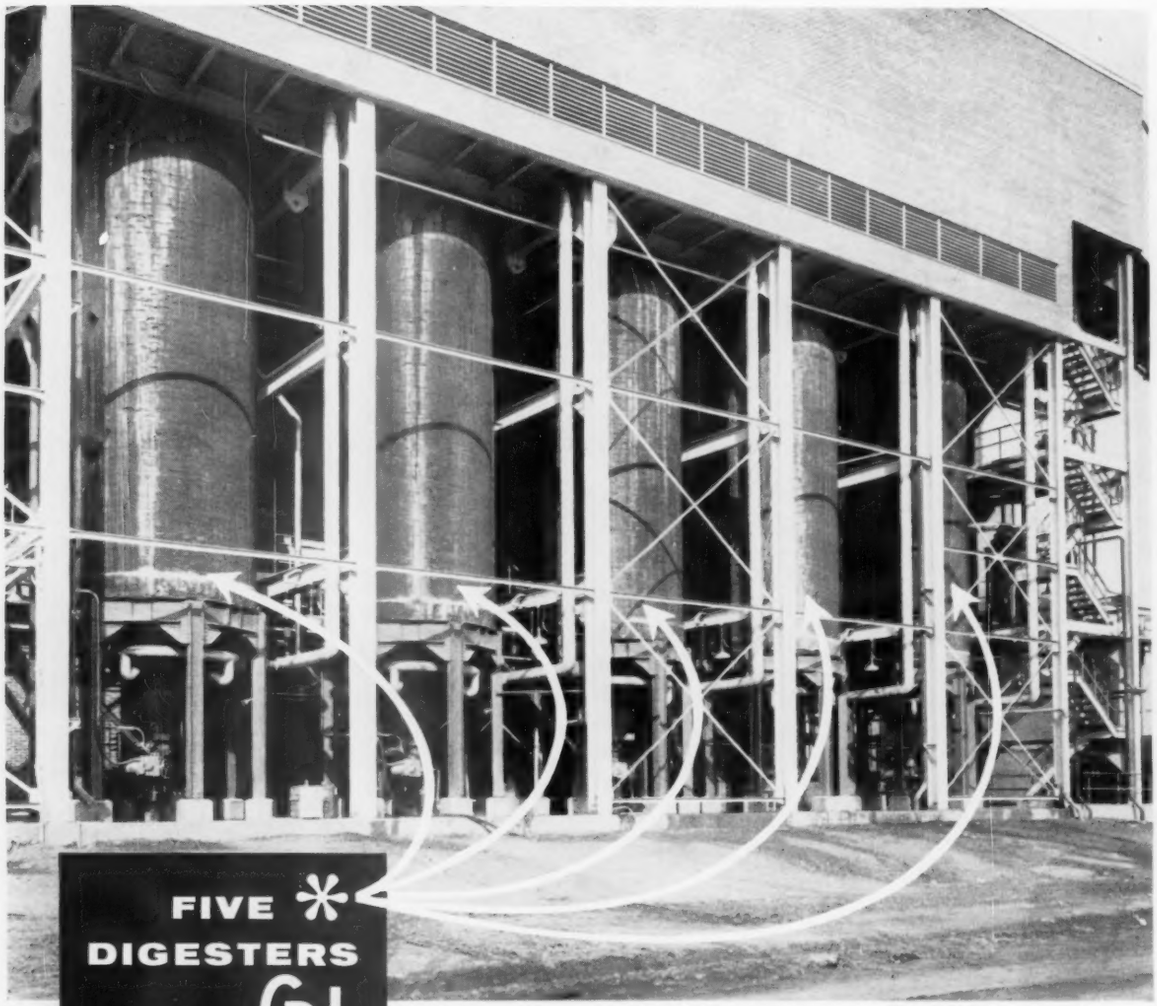


SAFEGUARDED against corrosion, water and fumes this 200-hp totally enclosed, fan-cooled General Electric motor (1 of 2) drives a vacuum pump.





EFFECTIVE CONTROL and short-circuit protection for mill's 2300-v G-E motors is supplied by new Limitamp* controllers that take only half the space of previous models. *Reg. trade-mark of General Electric Co.



FIVE * DIGESTERS built by CB&I

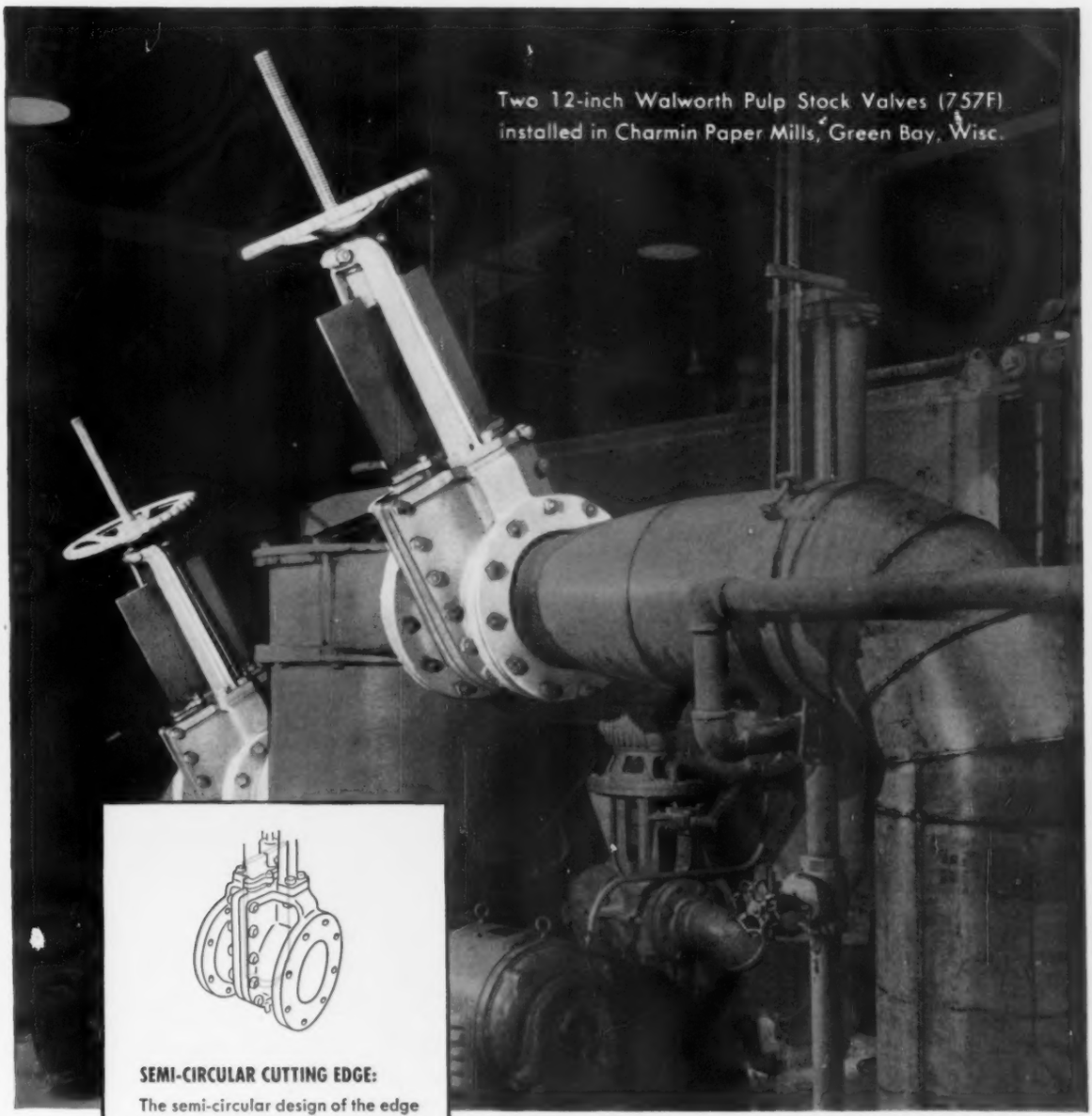
. . . help handle over 400 tons of unbleached sulphate daily for southern mill

Six digesters, five of which were built by CB&I of A-285 Grade "B" fire box steel, handle over 400 tons of unbleached sulphate daily at the Bowaters Southern Paper Corporation's $60 million newsprint and sulphate mills at Calhoun, Tenn. Each digester has a shell thickness of two inches and weighs approximately sixty-two tons.

CB&I's facilities for designing, fabricating and erecting steel plate structures are complete . . . including equipment at all four plants for stress relieving, X-raying and pickling and painting. When you plan steel plate structures, write your nearest CB&I office for information, estimates or quotations.

Chicago Bridge & Iron Company

Atlanta • Birmingham • Boston • Chicago • Cleveland • Detroit • Houston
Los Angeles • New York • Philadelphia • Pittsburgh • Salt Lake City
San Francisco • Seattle • Tulsa
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.



Two 12-inch Walworth Pulp Stock Valves (757F) installed in Charmin Paper Mills, Green Bay, Wisc.

SEMI-CIRCULAR CUTTING EDGE:

The semi-circular design of the edge of the gate affords more cutting surface than straight edged gates. The edge is beveled and hone sharpened and, coupled with the notched design of the body, shears through pulp fibers easily while valve is being closed.

WALWORTH PULP STOCK VALVES FOR CLOG-PROOF OPERATION

OTHER FEATURES: Disc guided during its complete travel; precision-machined surfaces; Standard A.S.A. face-to-face dimensions; easily accessible packing. Valves made of corrosion-resistant nickel cast iron, with either stainless steel or bronze trim. Rated 60 psi cold water pressure. Sizes 4 - 24 inches. See your Walworth Distributor or write on business letterhead for illustrated circular.

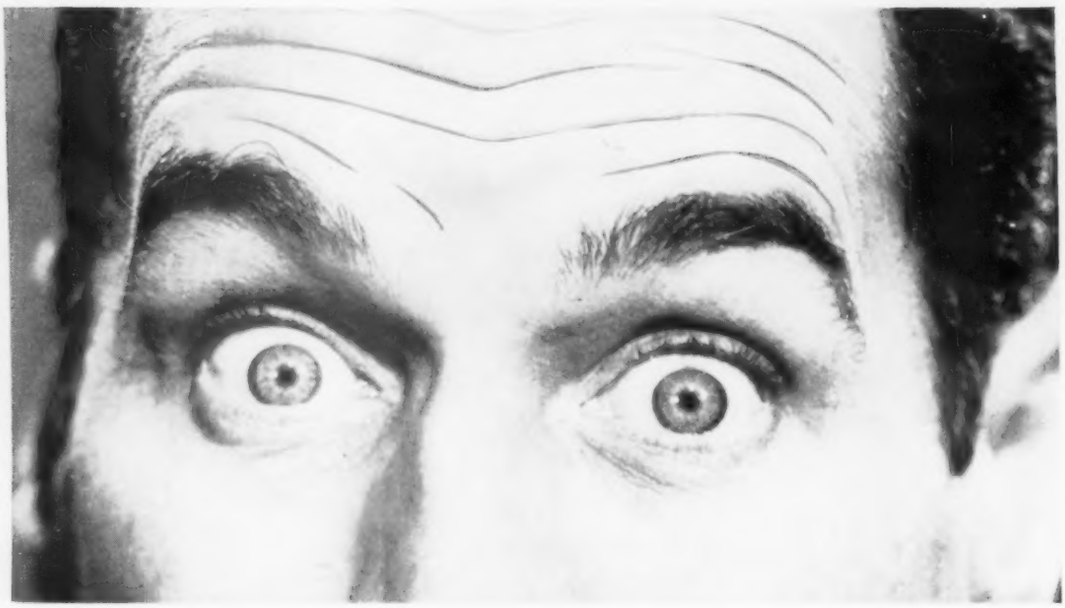
DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD

WALWORTH

60 East 42nd Street, New York 17, New York

SUBSIDIARIES: ALLOY STEEL PRODUCTS CO. · CONOFLOW CORPORATION · GROVE VALVE & REGULATOR CO. · SOUTHWEST FABRICATING & WELDING CO., INC. · M & H VALVE & FITTINGS CO. · WALWORTH COMPANY OF CANADA, LTD.

Dryer Felt EMERGENCY?



call Brandon Sales for immediate service

When a dryer felt emergency comes up, quick service is essential. Good service is our ambition, and we thrive on doing the impossible in an emergency.

Brandon Sales has all types of dryer felts, and our representatives are trained to service every dryer felt need.

Wherever you are in the United States, call us for quick emergency service, or for your regular dryer felt needs.

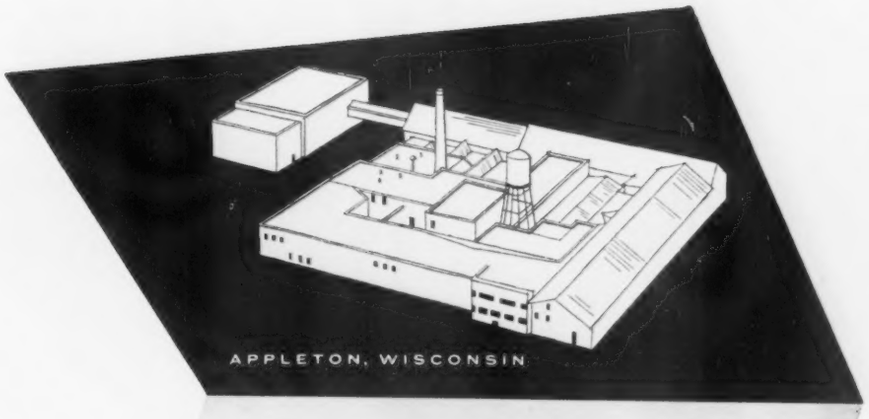
Brandon Makes All Three—Asbestos, Semi-Asbestos, Cotton.

For immediate attention to your dryer felt problems, write:

Brandon Sales, Inc.
Drawer L, Branwood Station
Greenville, South Carolina

Representatives:
Northern and New England States
Orton Corporation, Fitchburg, Mass.
Midwestern States
Frank Clawson, Kalamazoo, Mich.
West Coast
M. J. Maguire, Portland, Oregon
Southern States
R. S. (Bob) Davis, Greenville, S.C.

BRANDON DRYER FELTS



APPLETON, WISCONSIN

Confidence....in the paper industry

Foresight.....to anticipate changing conditions and requirements of the paper industry with new manufacturing facilities

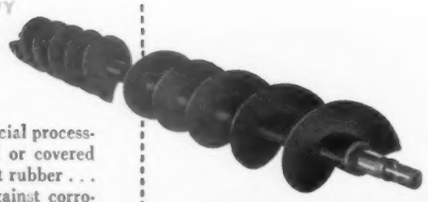
MONTGOMERY, ALABAMA ...
IN PRODUCTION SINCE OCTOBER, 1954

Appleton Wires are Good Wires

Appleton Wire Works, Inc.
GENERAL OFFICES, APPLETON, WISCONSIN

NO SHAPE TOO SCREWY

for ACE Rubber Linings and Coverings



Most any size or shape of special processing equipment can be lined or covered with quality ACE hard or soft rubber . . . for meticulous protection against corrosion, to resist abrasive wear, or to provide electrical insulation. Ask for recommendations.

STOP VALVE CORROSION

at lower cost

There's an ACE hard rubber, rubber-lined, or plastic-lined valve for every corrosion application. Sizes from 2" to 24". Diaphragm, gate and check types. Free *Bulletin CE-52* lists chemicals that can be handled.

Take the guesswork out of CORROSION

No need for "trial and error" to find the right rubber or plastic chemical equipment. Consult American Hard Rubber Company first. Now eleven basic materials. Wide range of temperatures, pressures, strength. Backed by a century of experience. Write for facts today, or ask for name of Distributor.

FOR HIGH PRESSURES OR BIG PIPE LINES

ACE Rubber-Lined Steel . . . strength and pressures of steel plus chemical resistance of hard rubber. Excellent for alkalis, most inorganic acids, many organic acids, all salts, bleaches. Sizes 1¼" to 24" and up. *Bulletin CE-52.*

ACE-HIDE ACID PAIL

Practically indestructible

Its made of a new rubber-plastic material that's tough, resilient, suitable for handling most acids and alkalis. 3-gal. size. Easy-pour, drip-proof spout. Also 1-qt. and 2-qt. dippers, hard rubber bottles, etc. Write for name of nearest dealer.

ACE processing equipment of rubber and plastics

AMERICAN HARD RUBBER COMPANY

93 WORTH STREET • NEW YORK 13, N. Y.

a guarantee of performance:

You can't clog a liquid impeller!

There is no clogging problem, because there is nothing to clog. Pumping action is caused by a *liquid* impeller, a swirling vortex of fluid.

- No constrictive impeller eye
- No constrictive discharge ports
- No wearing rings

Material flows completely unobstructed, from suction to discharge flange.

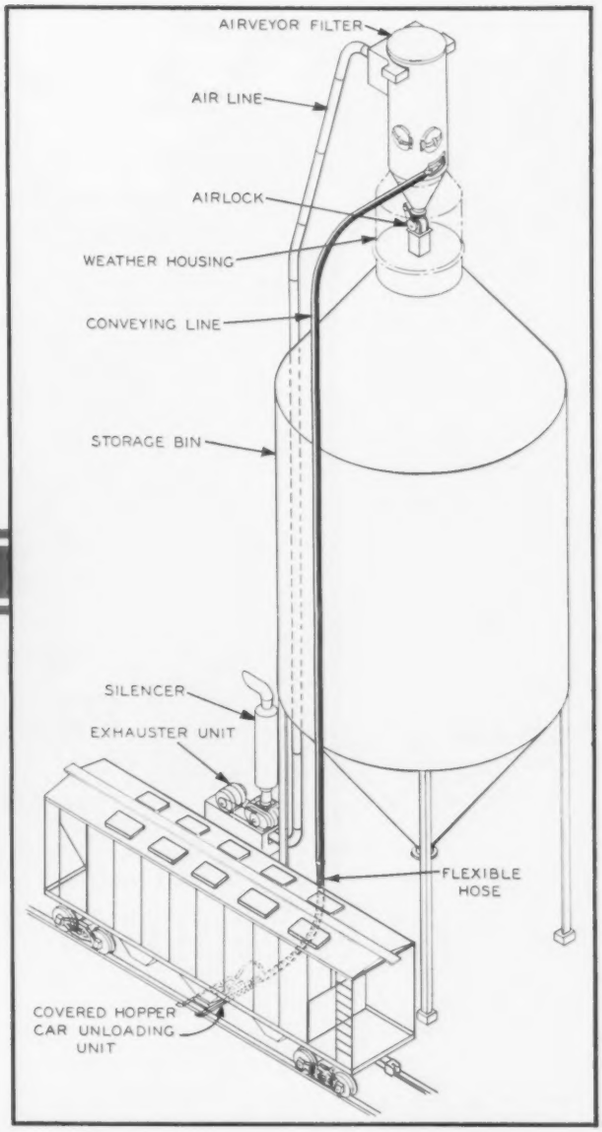
Write for complete details on the Wemco torque-flow Solids Pump and its amazing principle of operation.

WEMCO

TORQUE-FLOW SOLIDS PUMP

WESTERN MACHINERY COMPANY

650 FIFTH STREET, SAN FRANCISCO 7, CALIF.



No. 6

for

WEYERHAEUSER TIMBER COMPANY

The excellent record of the Airveyor® conveying system, wherever it is used—indoors or out—goes back more than 30 years. Outstanding dependability in operation is based on practical job-rated design, plus sturdy construction, inherent in all Fuller equipment. It has raised standards of efficiency, replacing outmoded and out-worn methods of moving materials. The acceptance of the Airveyor in the pulp and paper industry is attested to by the many outstanding installations in successful operation in that field . . . over 150 in pulp and paper mills in the United States and Canada.

Illustrated is an Airveyor system installed by the Weyerhaeuser Timber Company in its Longview, Washington mill for unloading light soda ash from box or covered hopper cars, and conveying to a storage bin at rate of 12-1/2 tons an hour. This is the sixth Airveyor system purchased by this well-known company for use in its various mills.

When you want to move materials, call on Fuller. With the many years of experience in air-conveying, Fuller engineers are well qualified to study your problems and recommend equipment that will be working for you for many years. We will be glad to work with you for the betterment of your materials handling.

Fuller
. . . . pioneers in harnessing AIR

FULLER COMPANY
GENERAL AMERICAN
TRADE MARK

FULLER COMPANY
128 Bridge St., Catasauqua, Pa.

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SUBSIDIARY OF GENERAL AMERICAN TRANSPORTATION CORPORATION

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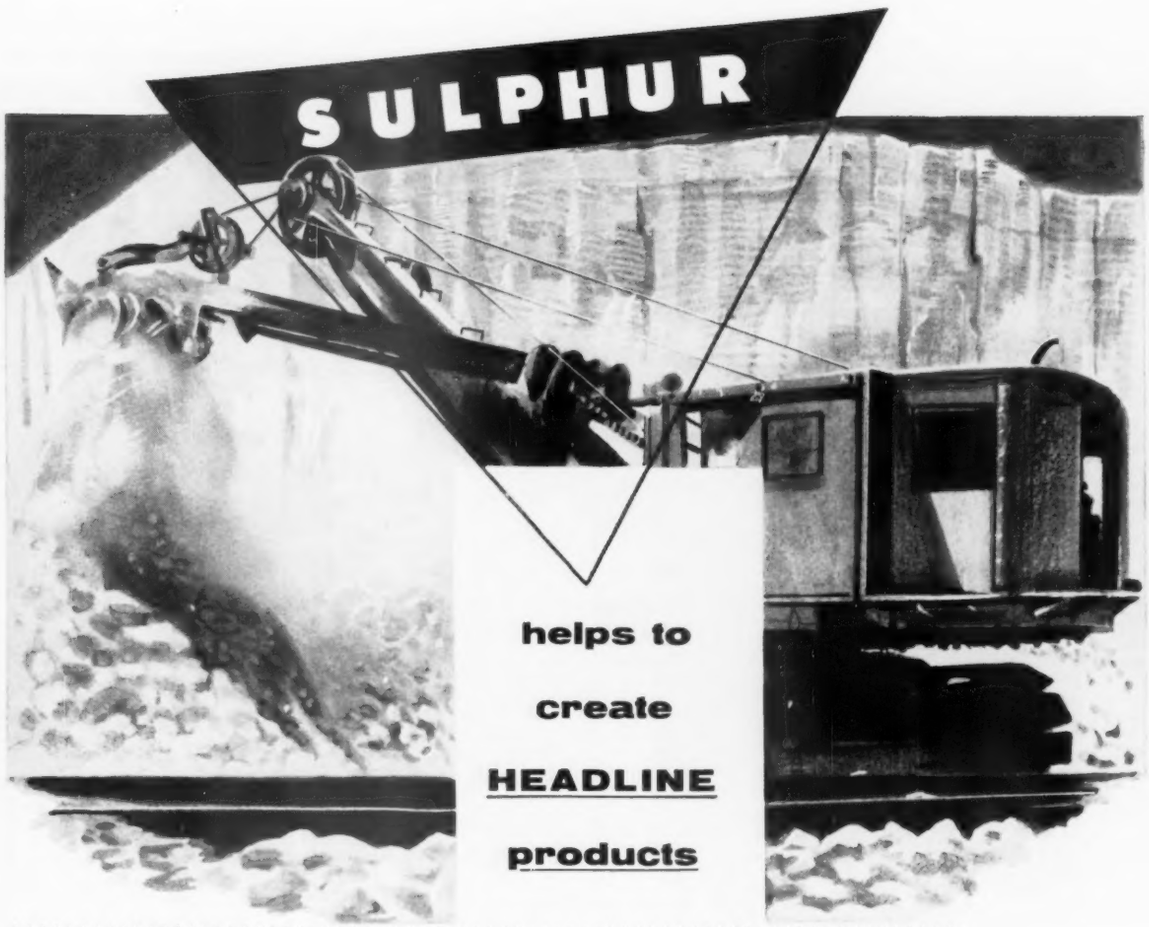
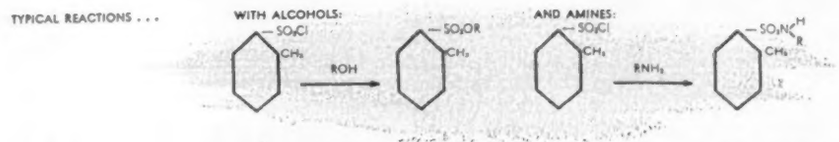


o-TOLUENESULFONYL CHLORIDE*



Industry has a new working tool in o-Toluenesulfonyl Chloride. This 98% pure ortho isomer can be used in building molecules for use in a wide variety of new products, from dyestuffs to pharmaceuticals; from plasticizers to herbicides. It is even possible that it is now being used in products you are making or have recently acquired.

From the chemical name of o-Toluenesulfonyl Chloride it is obvious that sulphur is a component of this compound . . . added evidence of the important role Sulphur plays in our industrial economy.

**Product of Monsanto Chemical Company*

Texas Gulf Sulphur Co.

75 East 45th Street, New York 17, N.Y.
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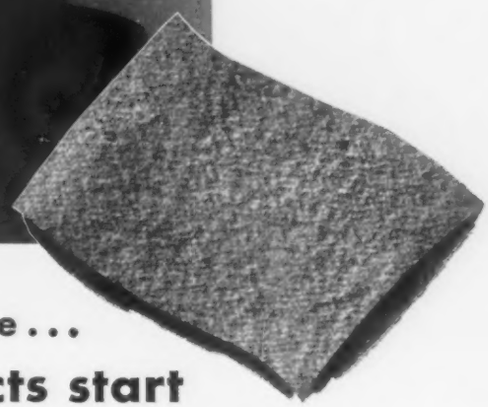
Sulphur Producing Units
- Newgulf, Texas
- Moss Bluff, Texas
- Spindletop, Texas
- Worland, Wyoming

At Oriskany, we start *right* with the *right felt design*. Our technical personnel, our designers, our chemists—all these specialists combine their talents to develop the felt that's best for your particular operation.



On every type of paper machine . . .

Better paper products start with correct FELT design!

Whether you are running the finest tissue or the heaviest board, you'll get more uniform production when the felt you use is *specifically designed* for your machine and the type of paper product you are making. At Oriskany, your particular requirements are analyzed by our production staff, and your felt is designed with the proper characteristics for finish and drainage and fiber strength to produce the best results on your machine operation. We can also treat the felt with our exclusive chemical formulas to combat unusual conditions.

Do you have a special felt problem? Talk to the competent Oriskany Sales Engineer when he calls at your mill. He can offer you sound, helpful advice, and he can suggest a design improvement or one of our many chemical treatments to correct your specific felt problem.

First choice—because They last

Oriskany

WATERBURY FELTS

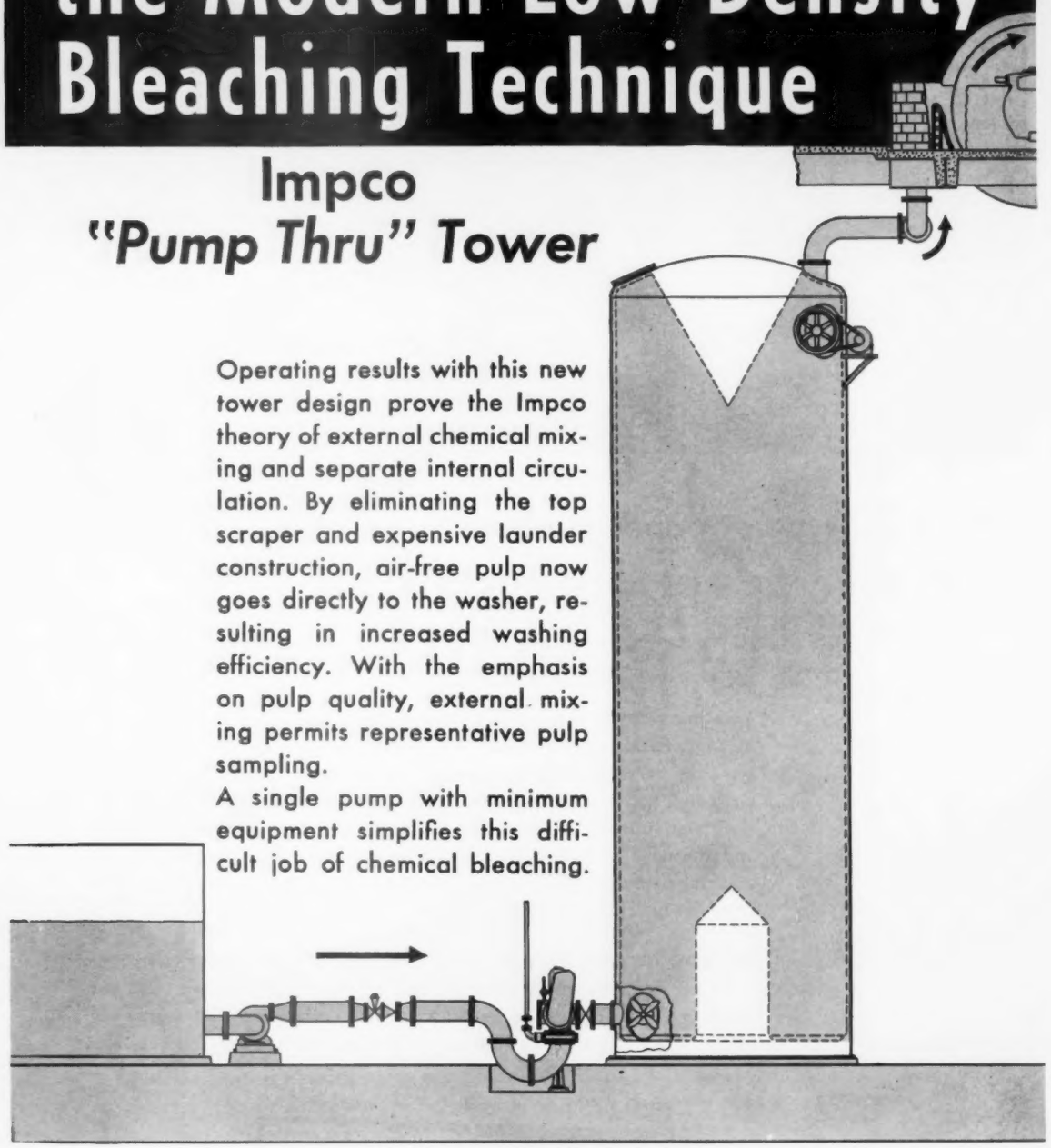
H. WATERBURY and SONS COMPANY • ORISKANY, NEW YORK

the Modern Low Density Bleaching Technique

Impco
"Pump Thru" Tower

Operating results with this new tower design prove the Impco theory of external chemical mixing and separate internal circulation. By eliminating the top scraper and expensive launder construction, air-free pulp now goes directly to the washer, resulting in increased washing efficiency. With the emphasis on pulp quality, external mixing permits representative pulp sampling.

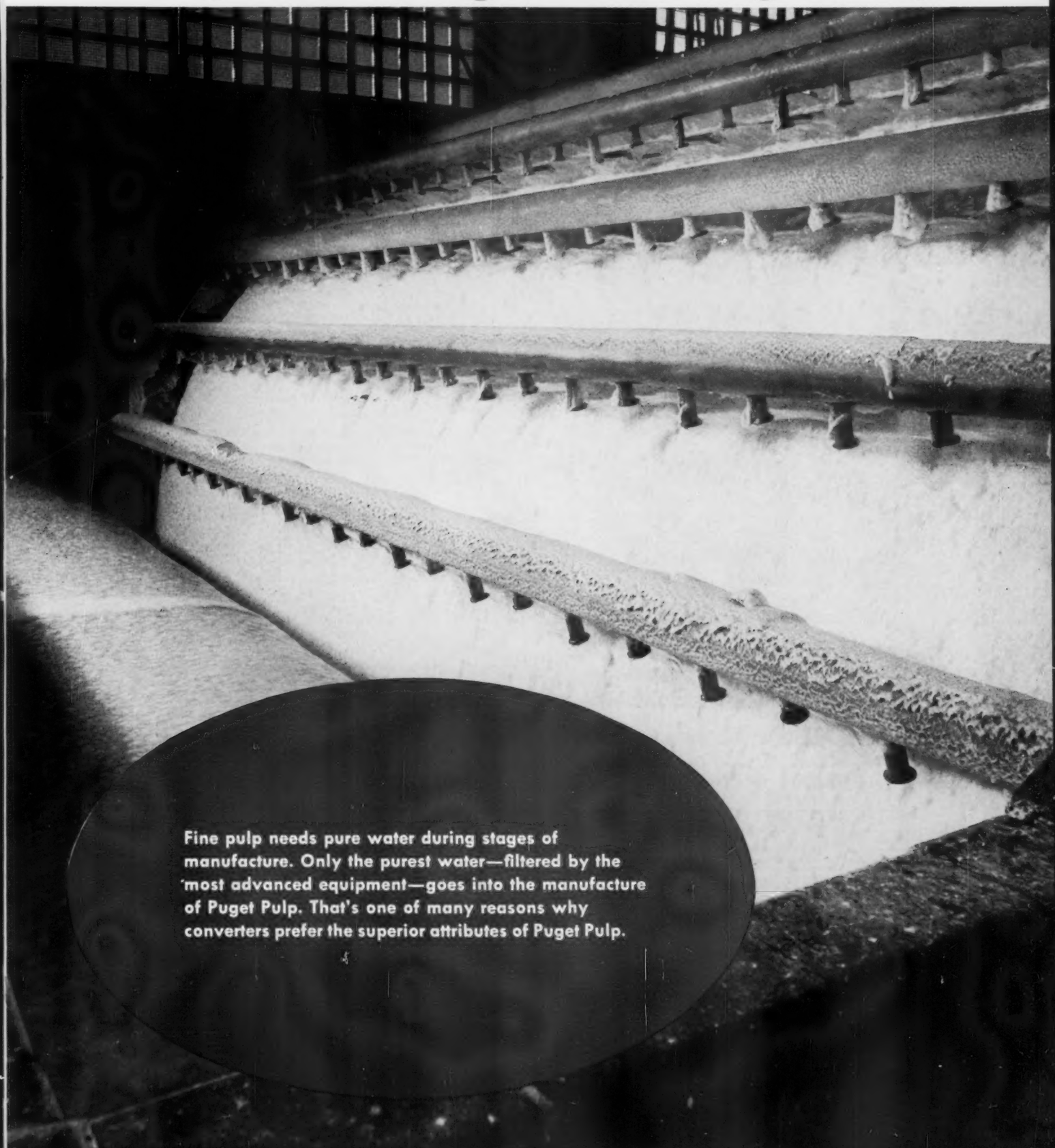
A single pump with minimum equipment simplifies this difficult job of chemical bleaching.



IMPROVED MACHINERY INC.
NASHUA · NEW HAMPSHIRE

In Canada, Sherbrooke Machineries Limited, Sherbrooke, Quebec

Only the Best goes into Puget Pulp



Fine pulp needs pure water during stages of manufacture. Only the purest water—filtered by the most advanced equipment—goes into the manufacture of Puget Pulp. That's one of many reasons why converters prefer the superior attributes of Puget Pulp.

PUGET SOUND
PULP AND TIMBER CO.
BELLINGHAM, WASHINGTON

NOPCO OFFERS 21 WAX SIZES

to give your paper every combination of properties you want

Nopco Wax Sizes perform at least 4 important functions to help you make high quality paper and board that will give you an edge in today's highly competitive market.

1. Improve those properties which are difficult or impossible to obtain with rosin sizes.

2. Lower your sizing *costs* by replacing 30% to 50% of rosin size.

3. Improve the sizing of fortified rosin sizes.

4. Enhance the surface qualities of your paper and board, when used either alone or in conjunction with starch or other film-forming materials.

With any of these sizes goes the skilled counsel and wide experience of Nopco's paper technicians. They will welcome the opportunity to work with you on the toughest problems you have. Write today for their recommendations.
Nopco Chemical Company, Harrison, N. J.

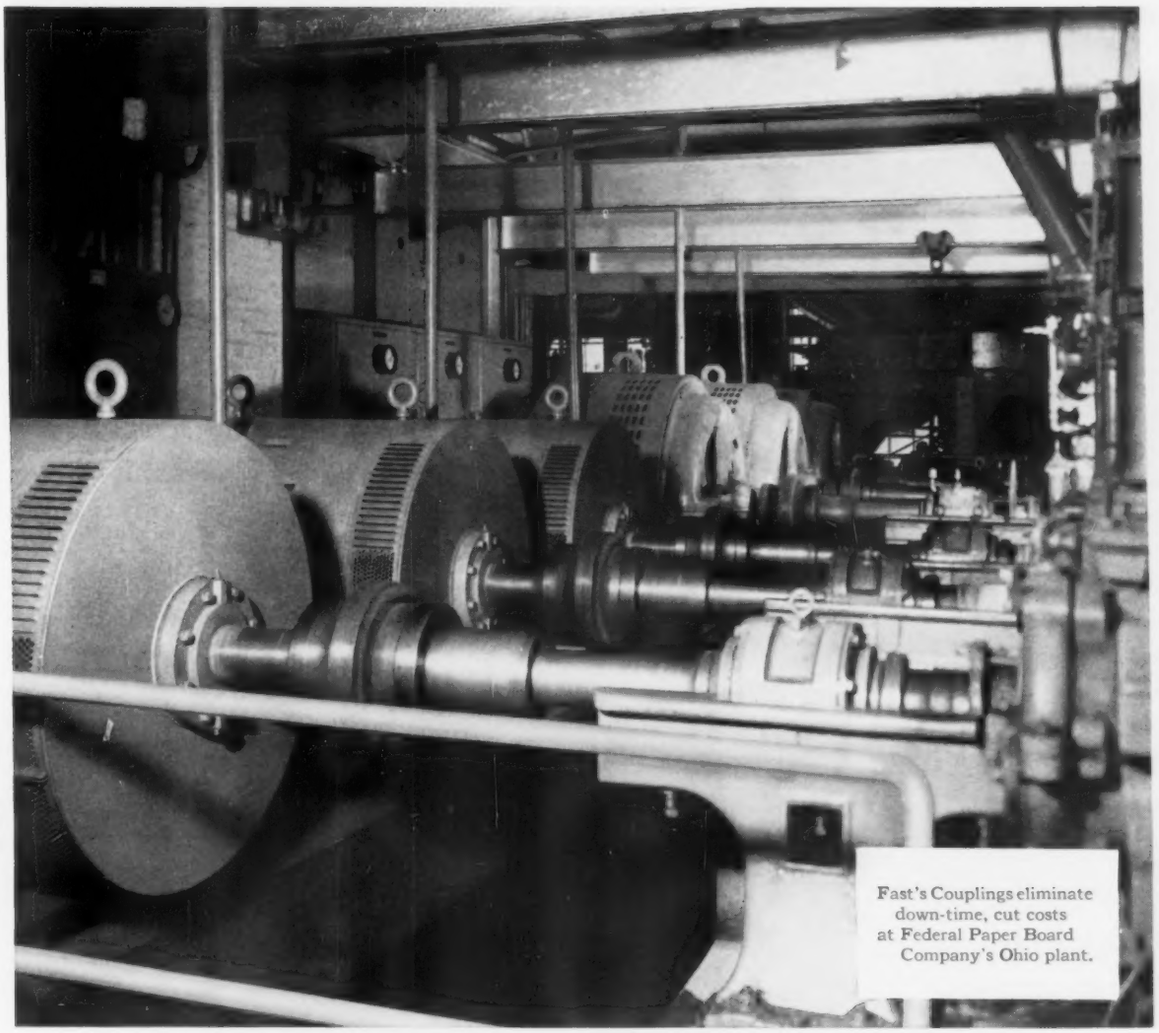
NOPCO WAX SIZE SELECTOR CHART

	All Wax Acid Stable Nopco 1055 Series										Rosin-Wax Acid Stable Nopco 1155 Series				All Wax Alkaline Stable Nopco 1255 Series			Nopco Special Series			
	A	B	C	F	K	L	M	N	W	X	A	B	C	L	A	M	X	1245A	2252	KKE	KKE-1
Improved Finish	✓	✓	✓		✓	✓		✓		✓	✓				✓		✓	✓	✓		
Improved Fold	✓		✓				✓			✓					✓	✓	✓		✓		
Improved Calender Staining	✓									✓					✓		✓				
Oil Resistance							✓						✓			✓				✓	✓
Ink Resistance		✓	✓							✓		✓		✓			✓	✓	✓	✓	
Blood Resistance		✓					✓			✓				✓			✓	✓	✓		
Lactic Acid Resistance				✓				✓					✓								✓
Hot Liquid Resistance								✓					✓								✓
Grease Resistance		✓	✓				✓			✓											
Scuff Resistance		✓	✓				✓		✓	✓		✓	✓								✓
Printing Qualities	✓	✓			✓					✓	✓	✓	✓		✓		✓		✓	✓	
Starch Coating Lubricant	✓				✓	✓				✓					✓		✓	✓	✓		
Decrease Fuzz	✓	✓				✓				✓					✓		✓	✓	✓		

1907 – 1957 50 Years OF PROGRESS IN CHEMISTRY

NOPCO

PLANTS: Harrison, N. J. • Cedartown, Ga.
Los Angeles, Richmond, Calif. • London, Canada



Fast's Couplings eliminate down-time, cut costs at Federal Paper Board Company's Ohio plant.

Federal Paper Board Company has specified Fast's Couplings since 1944

In 1944, the Steubenville, Ohio, Mill of Federal Paper Board Company installed three #5 Jordan-type Fast's Couplings to obtain maximum power transmission with minimum down-time. In 1946, this firm installed three additional #5 Fast's Couplings. Again in 1950, Federal Paper Board Company specified Fast's Couplings, three #4½ Jordans.

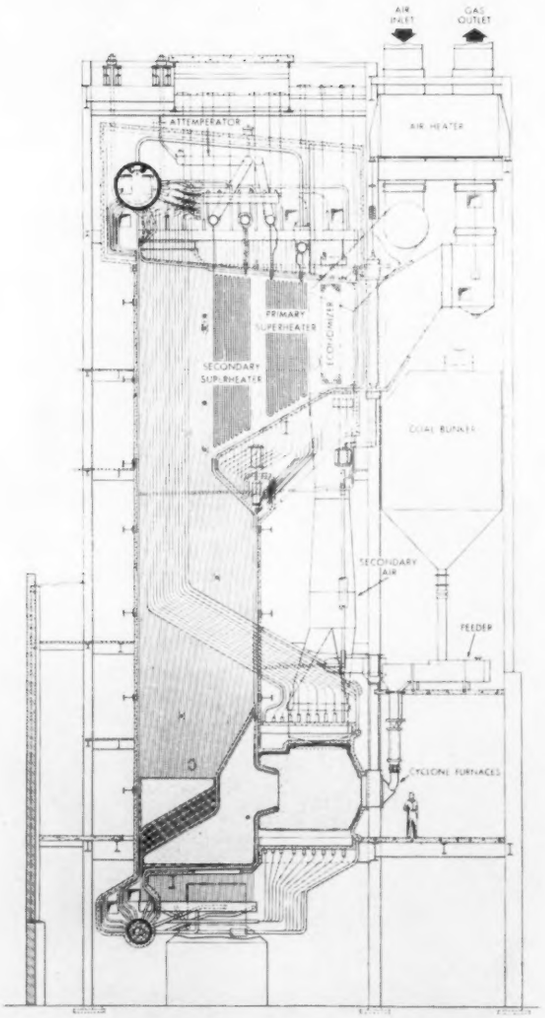
Recently, Mr. R. J. Quinn, master mechanic of this plant, stated: "Not one of these Fast's Couplings has given us any trouble whatever. They're absolutely essential to our plant production. If these Fast's Couplings failed, our plant would be forced to shut down." Mr. Quinn uses many other standard Fast's Couplings throughout the plant, and is completely sold on them.

There's a Fast's Coupling for every power transmission application. Remember: *Fast's Couplings usually outlast the equipment they connect.* For catalog write to: KOPPERS COMPANY, INC., Fast's Coupling Dept., Metal Products Division, 2706 Scott Street, Baltimore 3, Maryland.

Engineered **Products Sold With** ***Service***

KOPPERS

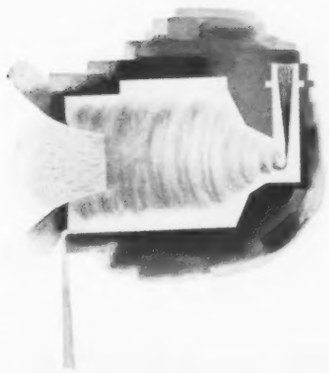
THE ORIGINAL **FAST'S Couplings**



B&W Radiant Boiler with four Cylone Furnaces for a large southern paper mill has a capacity of 450,000 lb of steam per hr. The furnaces are designed for firing hogged fuel as well as coal. This is one of two units being installed in this plant.

EIGHT MILLS SAVE MONEY WITH CYCLONE FURNACE BOILER UNITS

MILL	NO. OF BOILERS	TOTAL CAPACITY LB/HR
Plant A (South)	2	900,000
Plant B (Midwest)	1	250,000
Plant C (Midwest)	1	150,000
Plant D (Midwest)	1	155,000
Plant E (East)	1	125,000
Plant F (South)	2	900,000
Plant G (Midwest)	1	300,000
Plant H (East)	1	400,000
	10	3,180,000



Paper Mills Turn to B&W Cyclone Furnaces for Lower Costs

Ten B&W Boilers with Cyclone Furnaces, having a total capacity of 3,180,000 lb of steam per hr, have been purchased to date by the pulp and paper industry.

B&W Cyclone Furnaces provide a simple, reliable, and efficient means of burning low grade coals. They not only simplify the entire process of coal preparation, combustion, ash segregation, and ash handling, but, at the same time, effect savings in most of the elements of steam generating costs. In the pulp and paper industry, some of them will burn hogged fuel as well as coal.

Ignition Stability is maintained over wide load ranges. Bituminous coals with high ash content and low ash-fusion temperatures are burned quickly and completely, within a small space. Fouling of heat absorbing surfaces and emission of fly-ash are reduced to a minimum. Most of the ash is trapped as liquid slag.

Performance Records prove the value of Cyclone Furnaces in high efficiency, availability, and economy, not only in pulp and paper installations, but also in the textile and chemical industries, and for steam-electric generation by central stations.

Development of Cyclone Furnaces, like that of Recovery Units, Cyclone Evaporators, and other equipment for the pulp and paper industry, stems from nearly a century of experience in steam generation. The Babcock & Wilcox Company, Boiler Division, 161 East 42nd Street, New York 17, N. Y.

P-801

BABCOCK & WILCOX

BOILER DIVISION

Meet Rayonier's new wood pulp sales team on "special assignment" to you

WHO: (left to right) S. E. Church, A. B. McCormick, Jr., W. H. Backer, T. D. Bielfeld, G. B. Creamer, D. McGillicuddy, Jr. and G. E. Durkee.

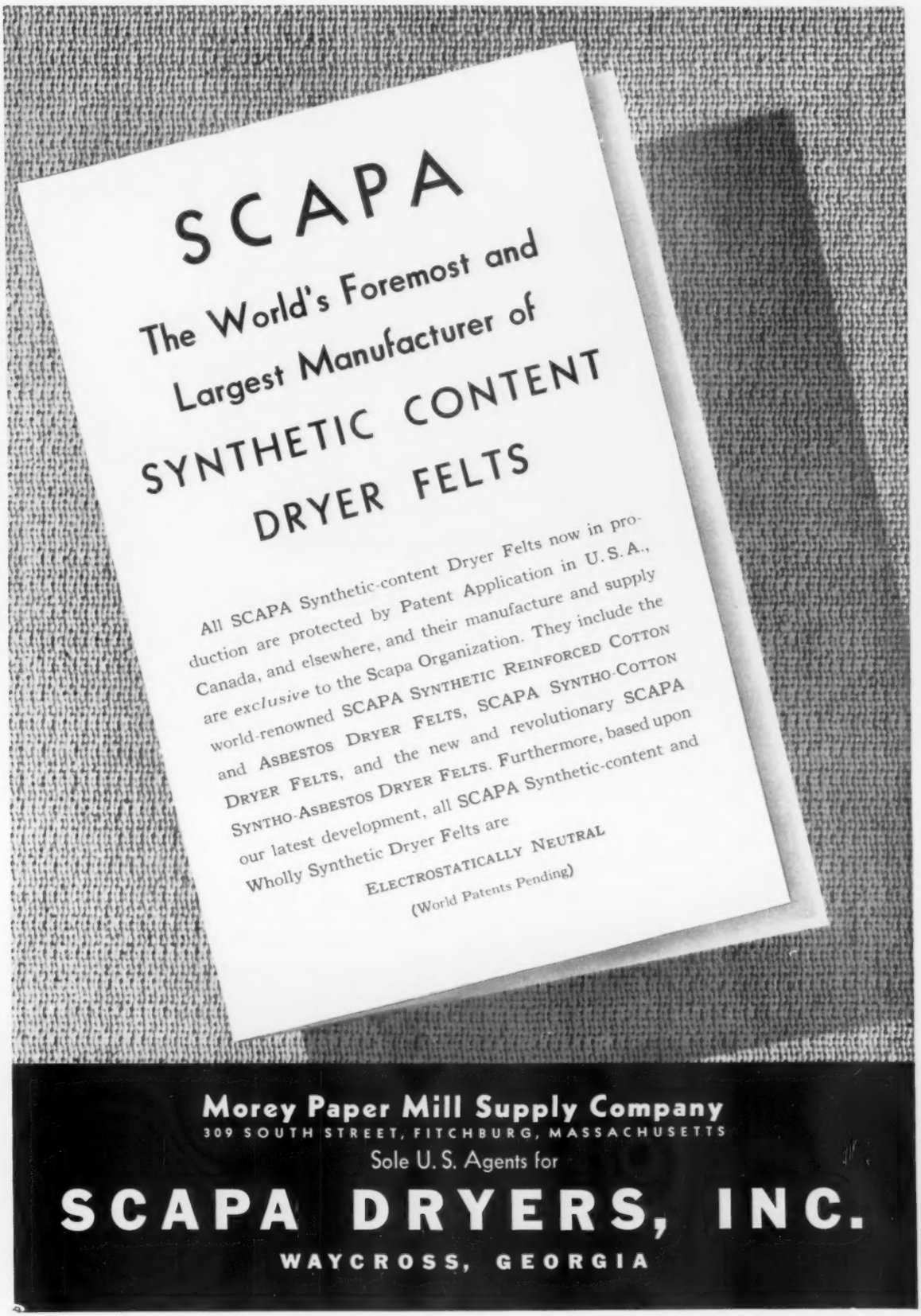
WHAT: Their assignment: to help you derive full benefits and profits inherent in Rayonier's complete line of quality wood pulps. These men know your industry as far as it's possible for a basic raw material producer to know any industry he serves. They're experts strongly supported by Rayonier Research—three completely staffed and equipped research operations in the U. S. A. and Canada. And at their instant call: our Technical Service, ready to lend special assistance on our pulps anywhere, any time.

WHY: *Because Rayonier wants more than spot tonnage orders and short-term commitments. We look for repeat orders and long-term relationships that are more rewarding, to us and to you.*

WHEN: Right now! Rayonier is ready to serve you with quality sulfate pulps—both hardwood and soft wood—from our mills in the Southeast, and with sulfites from the Northwest and Canada . . . today, tomorrow and during the years ahead.

RAYONIER INCORPORATED *cellulose chemistry*

Executive and general sales offices: 161 East 42nd Street, New York 17, N. Y. Mills: Fernandina Beach, Florida; Jesup, Georgia; Hoquiam, Port Angeles and Shelton, Washington; Port Alice and Woodfibre, British Columbia.


SCAPA
The World's Foremost and Largest Manufacturer of
SYNTHETIC CONTENT DRYER FELTS
All SCAPA Synthetic-content Dryer Felts now in production are protected by Patent Application in U.S.A., Canada, and elsewhere, and their manufacture and supply are exclusive to the Scapa Organization. They include the world-renowned SCAPA SYNTHETIC REINFORCED COTTON and ASBESTOS DRYER FELTS, SCAPA SYNTHO-COTTON DRYER FELTS, and the new and revolutionary SCAPA SYNTHO-ASBESTOS DRYER FELTS. Furthermore, based upon our latest development, all SCAPA Synthetic-content and Wholly Synthetic Dryer Felts are
ELECTROSTATICALLY NEUTRAL
(World Patents Pending)
Morey Paper Mill Supply Company
309 SOUTH STREET, FITCHBURG, MASSACHUSETTS
Sole U. S. Agents for
SCAPA DRYERS, INC.
WAYCROSS, GEORGIA

new small instruments in fiber glass cases
indicate . . . transmit . . . control temperature or pressure

NOW . . . instruments as corrosion-resistant as the equipment they control! Every instrument in Fischer & Porter's new 1450 Series is housed in a fiber glass reinforced polyester case resistant to acids, alkalis, salts, solvents, dust, and weather. You can place indicators, transmitters, and controllers wherever you want—inside or out—without regard for corrosive fume and splash. The protection is built right into the housing . . . nothing to wear away or scratch off . . . no coatings to renew. The first such equipment available for process instrumentation, Series 1450 brings a new flexibility and freedom to instrument installation.

There's no way for corrosive atmospheres to reach the working instrument. Every exposed part is either plastic or 316 stainless steel. And a polyvinyl chloride gasket provides a positive seal against dust and moisture entry.

F&P has engineered the unique new 1450 Series housing for operation and maintenance ease. The entire instrument can be removed from the case if desired. Zero adjustment and range changes are easy. A plug in the removable door provides access to the adjustment screw for the optional external set point.

Field tested over a one year period, the 1450 Series is available NOW on four week delivery schedules.

SERIES 1450
CORROSION-PROOF INSTRUMENTS

Temperature Range:

minus 400F to plus 1000F.

Pressure Range:

30″ Hg vacuum to 5000 psi
As pneumatic receivers, 1450 instruments accommodate 3 to 15, 3 to 18, or 3 to 27 psi signals.

Instrument Options:

Single indicator • dual indicators • single indicator with dual alarms • indicating controller with any mode of control • indicating transmitter. Transmitter can provide pneumatic outputs, resistance outputs, or differential transformer outputs.

Controller Options:

- universal controller with on-off, proportional, differential gap, and manual reset
- wide band proportional
- wide band proportional plus automatic reset
- wide band proportional plus automatic reset plus derivative

Mounting:

Suitable for surface, pipe, or panel mounting. Panel cutout size is 8¾″ x 10¼″.

For complete data write Fischer & Porter Co., 2167 County Line Road, Hatboro, Penna.

FISCHER & PORTER CO.
Complete Process Instrumentation

Johns-Manville Special Packing Recommendations for pulp and paper mills

Service	Reciprocating Rods and Plungers: Large Packing Space	Reciprocating Rods and Plungers: Small Packing Space	Centrifugal & Oscillating Rods	Valve Stems
Ground Wood Pulp				
Pocket Grinder Cylinders Cold Water Rods	#190 Navalon® #189 Flax #271 Cross Diagonal	#190 Navalon #189 Flax #271 Cross Diagonal		
Pistons	#182 Aqua, #33 Universal, Moulded Packing Cups			
Pulp Pumps	#253 Interlocked #19 Centripac® #240, #181 Flax, no Graphite	#253 Interlocked #19 Centripac #240, #181 Flax, no Graphite	#253 Interlocked #19 Centripac #240, #181 Flax, no Graphite	
Sulphite Pulp				
Acid Pumps Valves Digester Pumps and Valves	#640 Plastic with end rings of #379 Flexible Metallic #2012 Chempac®	#640 Plastic with end rings of #379 Flexible Metallic #2012 Chempac	#640 Plastic with end rings of #379 Flexible Metallic #2012 Chempac	#640 Plastic with end rings of #379 Flexible Metallic #2012 Chempac
Sulphate and Soda Pulp				
Caustic Pumps and Valves Digester Pumps and Valves	#254 Interlocked #2021 Caustic #2012 Chempac	#254 Interlocked #2021 Caustic #2012 Chempac	#254 Interlocked #2021 Caustic #2012 Chempac	#254 Interlocked #2021 Caustic #2012 Chempac
Recovery Process				
Black Liquor Pumps Evaporators Green and White Liquor Pumps and Valves	#254 Interlocked #2021 Caustic #2012 Chempac	#254 Interlocked #2021 Caustic #2012 Chempac	#254 Interlocked #2021 Caustic #2012 Chempac	#254 Interlocked #2021 Caustic #2012 Chempac
Bleach Room				
Bleach Liquor Pumps & Valves	#254 Interlocked #2021 Caustic	#254 Interlocked #2021 Caustic	#254 Interlocked #2021 Caustic	#254 Interlocked #2021 Caustic
Chlorine Pumps and Valves	#2013 Chempac or #2017 Acid	#2013 Chempac or #2017 Acid	#2013 Chempac or #2017 Acid	#2013 Chempac or #2017 Acid
Machine Room				
White Water Stock Pumps	#253 Interlocked #19 Centripac	#253 Interlocked #19 Centripac	#253 Interlocked #19 Centripac	#253 Interlocked #19 Centripac
Jordans and Refiners Stock Chests				

Johns-Manville provides the right packing for every application

Johns-Manville, pioneer in packings for over 80 years, offers a full range of packings specifically designed for pulp and paper mill service.

For example, new J-M Chempac, impregnated with chemically resistant Teflon*, withstands chlorine, sulfurous acid, black liquor and all other corrosive chemicals encountered in pulp and paper mills. Other J-M Packings such as J-M Plastic Packing provide effective sealing with low friction, for high-speed rotating shafts. And of course J-M Interlocked braided packings have had an outstanding record of performance in general service for many years.

All J-M Packings help keep equipment in service longer, reduce maintenance and downtime for packing replacement. Your near-by J-M Packing Distributor carries stocks for your replacement needs.

To secure your free copy of the J-M Book on packing recommendations, simply write Johns-Manville, Box 14, New York 16, N. Y.

J-M Interlocked Braided Rod Packing

J-M Chempac Teflon-protected Packing

J-M Plastic Packing

J-M Centripac Rod Packing

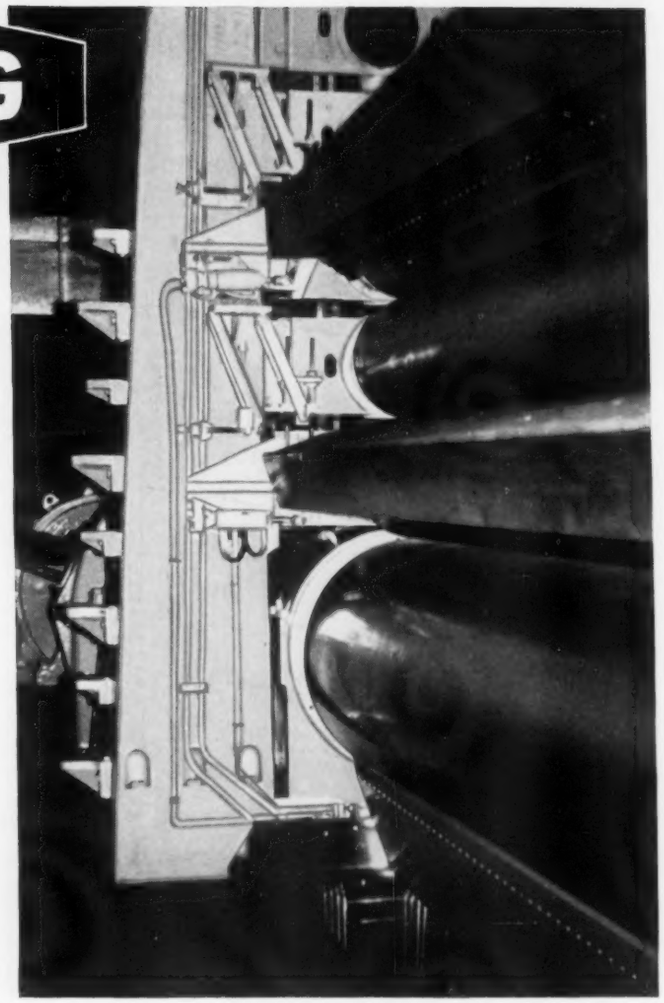
*Trade Mark for Du Pont Tetrafluoroethylene resin.

JOHNS MANVILLE JM PRODUCTS

Johns-Manville PACKINGS & GASKETS

LODDING

Just what the doctor ordered....



Lodding special linkage design because of special frame on this calender . . . . doctors retractable for roll changes. Another example of the long-standing Lodding principle:

Recognizing service requirements.
Delivering *results.*

LODDING ENGINEERING CORPORATION
WORCESTER, MASSACHUSETTS

On decking operations, the HD-6 has the power to cut costs and operational time.

BUILT FOR HIGH PRODUCTION—at both ends

52 drawbar hp • 5 speeds to 5.5 mph
12,600 lb

In the woods or at the mill, the Allis-Chalmers HD-6 crawler tractor easily handles tough dozing and skidding jobs.

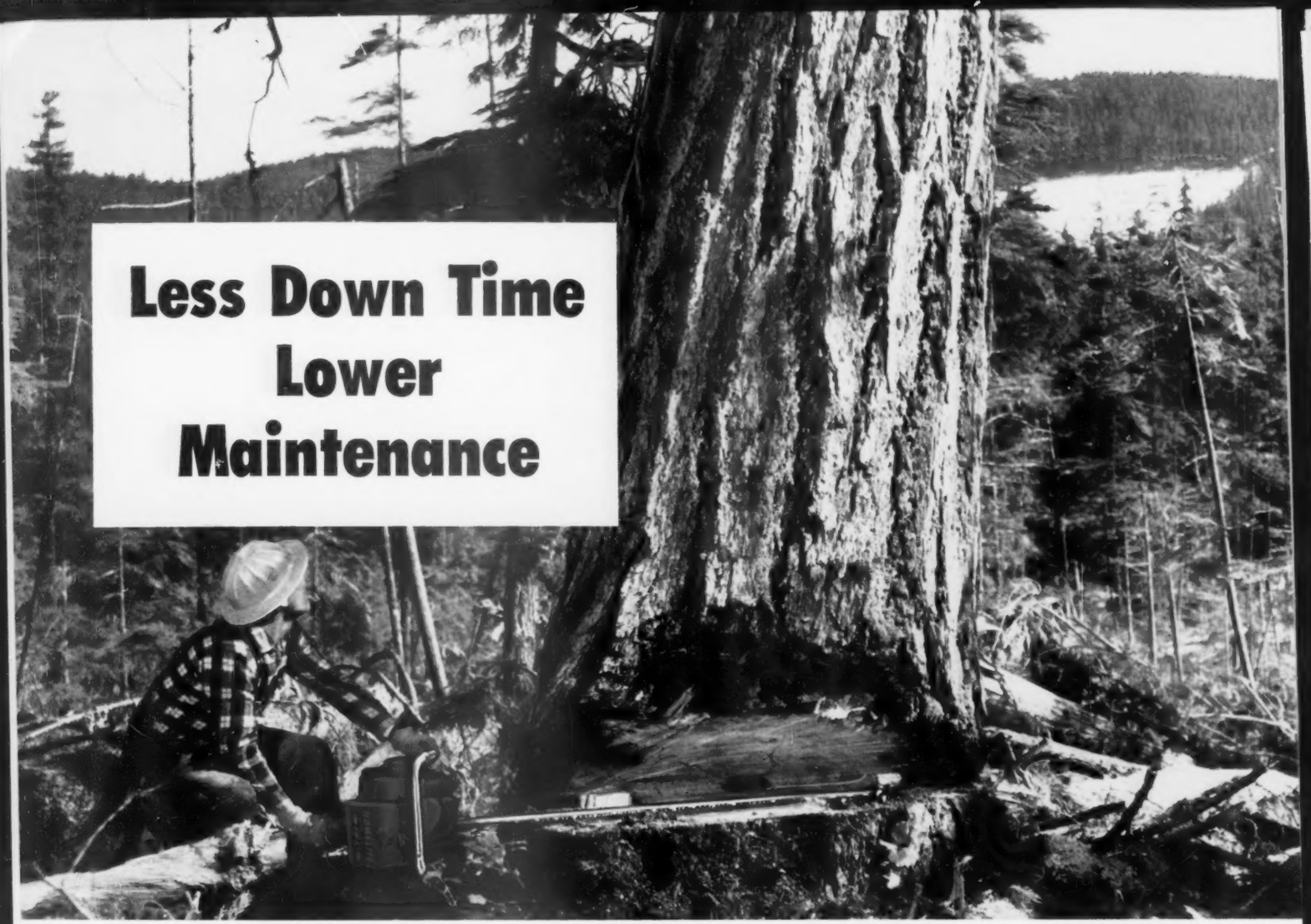
Veteran loggers report that the HD-6 has the power and balance to consistently handle such work as building and maintaining roads, clearing landings, decking logs and working at the mill on all types of logging and general cleanup work.

Let your Allis-Chalmers construction machinery dealer give you all the facts on the high-production HD-6. Check all these output-boosting features—long-life A-C diesel engine; double-reduction final drive for maximum ground clearance; heavy-duty truck wheels, idlers and support rollers with Positive Seals that keep grease in, dirt and water out . . . and many other advantages.

ALLIS-CHALMERS, CONSTRUCTION MACHINERY DIVISION
MILWAUKEE 1, WISCONSIN

ALLIS-CHALMERS

◀ The HD-6 has the power to skid and winch logs over rough and hilly terrain.



Less Down Time Lower Maintenance

The most powerful one-man chain saw you can own

You get more of the features you want in the Homelite 7-29:

Less down time because the famous Homelite precision design features high-compression, short-stroke engine which prolongs life, cuts gas consumption, starts quickly in any weather.

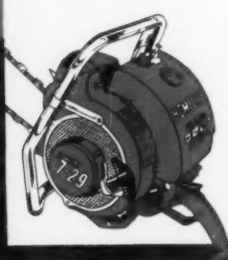
Lower maintenance with a belt drive that eliminates stretch, never requires adjustment or lubrication; built-in governor keeps engine at proper speeds, stops excessive wear and greatly prolongs life of the saw by reducing vibration, eliminating damage due to engine racing.

More production, greater profits with this powerful Homelite 7-29 that does every kind of cutting needed for high-production operation. Easy to operate, easy to handle, the perfect balance makes every type of cut in any position.

See your Homelite dealer for a free demonstration of the most powerful one-man chain saw you can own — the Homelite 7-29.

7 HORSEPOWER

29 POUNDS



Homelite builds and sells more chain saws than any other company in the world.

COMPLETE LINE OF CHAIN SAWS FOR EVERY CUTTING JOB

Model 17 — an all-purpose saw that brings down trees up to 4 feet in diameter. Available with special brush cutting and clearing attachments for complete versatility. 3½ horsepower, 20 pounds.

Model 5-20 — All the versatility of the 17 with added power. 5 full horsepower — 20 pounds. Brings down trees up to 6 feet in diameter.

Model EZ — lightest, most powerful direct drive chain saw ever developed. Only 19 pounds, full 5 horsepower. Brings down trees up to 3 feet in diameter.

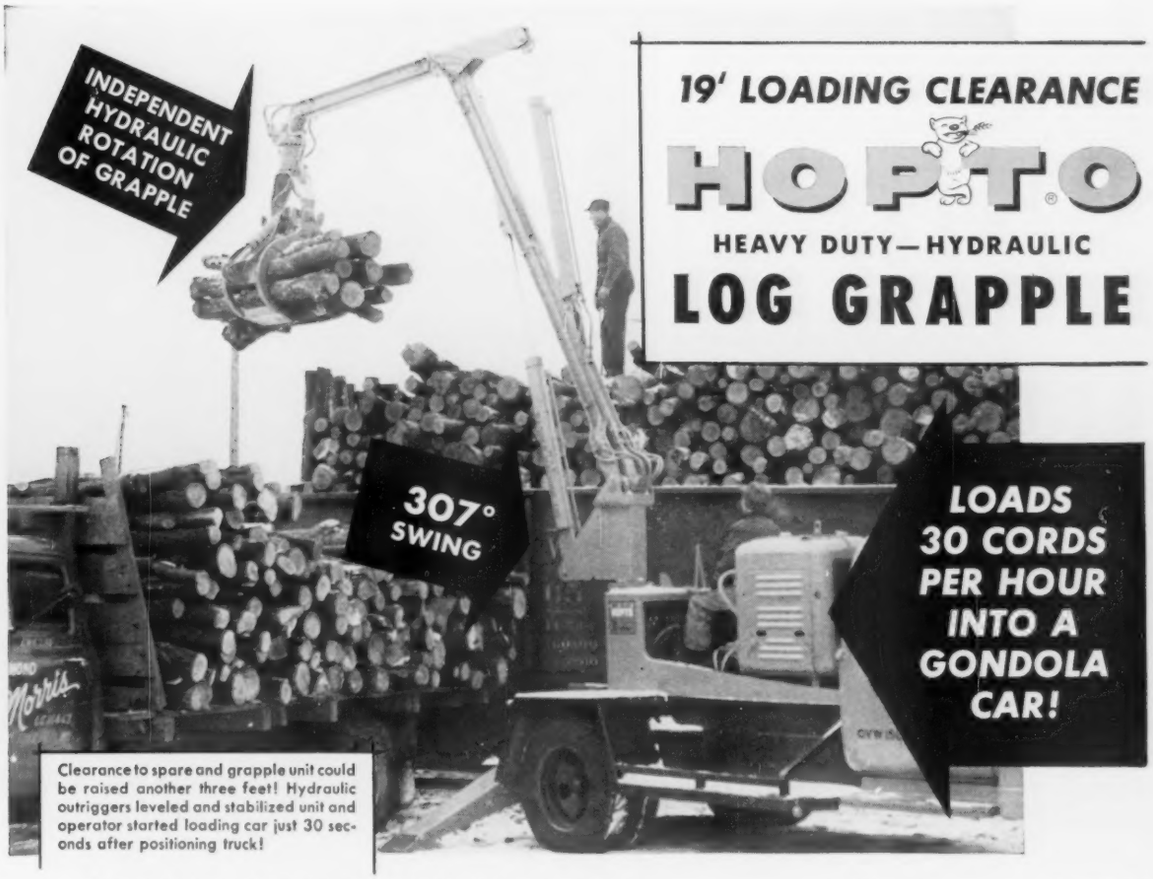
HOMELITE

A DIVISION OF TEXTRON INC.

7706 RIVERDALE AVE., PORT CHESTER, N. Y.

Manufacturers of

carryable pumps • generators • chain saws • blowers.



Clearance to spare and grapple unit could be raised another three feet! Hydraulic outriggers leveled and stabilized unit and operator started loading car just 30 seconds after positioning truck!

Badger backs up the claim of cutting handling costs with proof! You can prove it yourself . . . show a *worthwhile, measurable* difference . . . shrink handling costs of pulpwood to a fraction of previous costs! Here's how you can:

PROVE IT by cycling time and swing! With a 307° *continuous* swing and a *20* second cycling time you handle more loads per hour and boom swing is automatically cushioned for faster, *safer* starts and stops!

PROVE IT by independent rotation of grapple! Rotation of loaded grapple is done during boom swing so load is in position for uniform piling at completion of cycle . . . and ready to take a new, *big, fast* 'bite' at other end of cycle!

PROVE IT by loading height! You have a *full 19' clearance* for every loading or stockpiling operation.

PROVE IT by mobility and set up time—HOPTO mounts on any ton and a half or larger truck . . . quickly moves from one location to another. Independently controlled outriggers level and stabilize unit, *from operator's seat* . . . unit is ready to operate *within 30 seconds.*

PROVE IT by its outstanding safety features, the heaviest-duty, largest GPM hydraulic system in the field . . . and the proven engineering features that have made a digger-shovel-crane adaptation of the HOPTO 307 the standard of comparison in the construction industry!

WRITE TODAY for complete information and specifications on the HOPTO 307. Compare HOPTO with any other unit and you will know why HOPTO *is* the difference between profit and loss on your pulpwood handling problems.

BADGER MACHINE CO.

WINONA, MINNESOTA • Dept. X

Manufacturers of a complete line of heavy-duty, completely hydraulic grapples, cranes, diggers and shovels. One of the twelve models for wheel or track-type tractor mounting, for truck mounting, or complete wheel or track units is exactly right for your handling problems.

Independently operated rotator immediately above grapple positions unit *for any angle . . . at any height up to 19' clearance!*

No producer's too small to profit from FORD mechanization!

At the mill, at the landing and in the woods, Ford Tractors help slash the biggest cost of all in pulpwood production—slow, expensive hand labor. Loaders, winches, blades, lifts, shovels and dozens of other tools can be matched to Ford Tractors to handle logs, chips and other materials at the mill, to clean up around debarkers, to snake logs and pull drays out of the woods, to clear truck landings, to cut and maintain access roads and fire lanes—and all this on rubber. You have speed on the swing, excellent mobility on short moves, no expensive track maintenance.

Your Ford Tractor will cost you less than one laborer's annual wages. Phone your dealer or write to: Tractor and Implement Division, Ford Motor Company, Birmingham, Michigan.

Ford Tractor with Angle Dozer-Blade

Ford
TRACTORS AND INDUSTRIAL EQUIPMENT

You see more FORDS *because they save more money!*

3 MINUTE UNLOADING SCHEDULE ADDS A TRIP A DAY FOR HAULERS

Fast American Crane Speeds Wood Yard Operations

Transferring pulpwood from hauler's trucks to flatcars is done in a *matter of minutes* in the Heald Division wood yard of Mead Corporation. Until an American 300 Series Self Propelled Crane was assigned to the task, it took two or three men nearly an hour to unload each truck! As a result of the time saved haulers, they can bring in an additional load to the Lynchburg, Va., yards daily! Operations in the wood yard are speeded up because the American transfers as much as 7-1/2 tons of pulpwood from truck to flatcar on every cycle.

From an owner's and operator's standpoint, you'll find American Cranes perfect in performance. Operating records in yards and woods prove that Americans work with lower unscheduled downtime, lower operating cost, yet at consistently higher production rates!

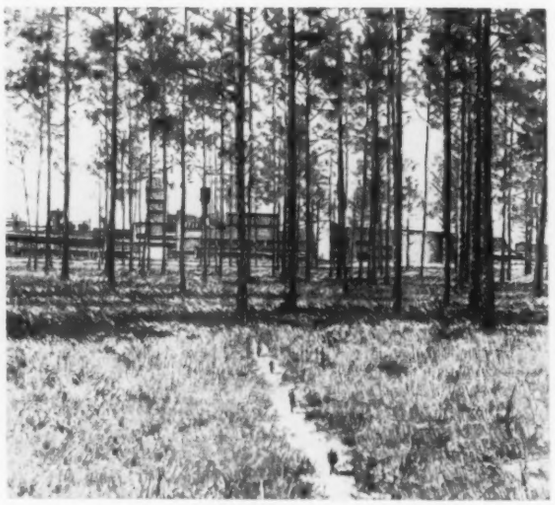
"Fast, efficient, dependable and mobile . . ." That sums up owners' reports on American Cranes working in every industry. For complete information on this versatile machine —on the entire American line of crawler and truck mounted cranes—see your distributor. He handles a complete line starting at 1/2-yard, 12-1/2 tons—up to 50 tons lifting capacity!

AMERICAN HOIST

and Derrick Company

Saint Paul 7, Minnesota

Management Plan Starts, with Timber Cruise . . .



And Ends Here, with Trees Ready to Cut

A PULP & PAPER Field Report

St. Regis Goes Around in Circles

Here is how its Southern forest engineers are solving woodland problems—answer: Sound forest management

● "A paper mill with a million dollar investment has got to look beyond tomorrow. It must put its forests in order, no matter how difficult the job appears to be."

One of St. Regis Paper Co.'s forest engineers made this comment as he started to describe the company's sprawling forest management program. This philosophy, though it may have been considered revolutionary ten years ago, has become generally accepted in the South today, a fact which becomes more and more evident every day.

No place is it more in evidence, however, than among the million-and-some acres owned in the South by St. Regis. What has been described as a "longhair scheme," has here been turned into a reality. St. Regis is literally going in circles—but those circles are carefully calculated and comprise one of the most ambitious and inclusive forest management programs in force anywhere.

The basic secret: Subdivision of St. Regis' forestlands into small working areas which can be well managed and supervised by professional foresters and their staffs.

The St. Regis Working Circle . . .

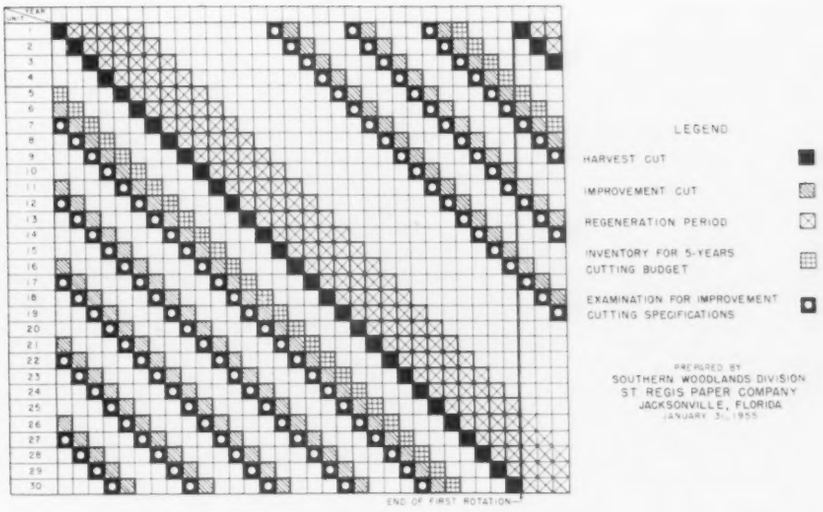
A majority of its more than a million acres has been laid out in working circles, averaging some 30,000 acres, which are further divided into 1,000-acre cutting units. Each working circle has its own forester and a well-trained staff. His job is to maintain in his circle, a carefully designed forestry program based on 30-year-rotation of the pine crop.

Under the plan, each cutting unit eventually will be treated as follows. In the first year a harvest cut will be made, leaving behind the best seed trees for reforestation. During the next five years, the growth pattern of the unit will be carefully observed and steps will be taken to assure maximum production on the unit. For the next eight years, the unit basically is left alone although good forestry practices are observed at all times. In the 14th year an improvement survey is made, followed in the 15th year by an improvement cut if necessary. Operating on a five year cycle (three year's growth, one year improvement survey, one year improvement cut) for the next ten years, St. Regis foresters make a harvest cut inventory in the 26th year. Then in the 30th year, the unit is clear cut and the cycle starts over.

Exceptions: The forester has the option to suggest reducing the overall rotation period on exceptional units, or, in cases of fire or insects, make the necessary reappraisal of the unit.

This plan is followed for the 30 units in each working circle. During a typical year the forester in charge of each working circle can look forward to a minimum of the following: One unit will be harvest cut; three will be surveyed for improvement cutting; three units will be improvement-thinned and one will be inventoried for its final harvest.

Management Activity Schedule Shows How Working Circle Operates on 30 Year Rotation



Forest engineers have allowed a ten-year "initiation" period for each circle during which priority is designated to each unit and the cutting cycle is established.

Units which have no scheduled activity for a given year will be control-burned when necessary and roads and fire lanes will be constructed. Careful records are kept on each unit so that a clinical history on the unit is available at all times. Even mistakes are noted on these forms. During his examination of the unit to be improvement-cut, the forester not only marks trees to be removed, but specifications for the entire cutting operation are drawn up, as well as the estimated volume of removals, tallied by species and product.

(Example: The forester will tally pine, hardwood and cypress in standard rough cord volumes by both pulpwood size and sawtimber size. This will be done for both residual volume and merchantable timber.)

Selected Cuttings are Made...
To produce genetically superior trees.

When a unit is harvest cut, seed trees will be left standing only on stands where natural reforestation is considered feasible. All other units will be clear cut and, where necessary, site preparation practices will be observed. Through this systematic approach to the rotation period of each unit, St. Regis plans to employ every possible means to insure maximum production.

How Plan Was Started . . .

Since St. Regis started from scratch with its plan, a detailed forest inventory and mapping program was carried out in each unit first. Once a survey had been completed on the working circle, each unit was studied to determine its position in the cutting cycle of the circle. Need for rehabilitation, cultural and other forest improvements were considered in setting up the initial priority of the units.

An initial cutting schedule was then mapped out. It was apparent that a certain amount of flexibility had to be permitted, to account for unforeseen circumstances such as fire or other damage. Once the system is started, the objective is to put the entire working circle into full production as soon as possible.

The forest engineering staff is the first to admit that there will be modifications as time goes on. They point out that it is virtually impossible to expect the priority schedule to stand up exactly as it is originally established.

"The important thing," said one of them, "is that when modifications are necessary, we'll be moving from one planned action to another.

"This plan provides for a systematic timber harvesting operation and is designed to provide for the maximum volume of removals consistent with good forestry, and at as low a cost as possible."

In Scandinavia, Finland, Germany and other nations where similar projects have long been tried, a perfect system has never been found. But many have realized as high as 80% effectiveness in their programs. And the remaining 20% has come much easier with a definite plan of action to follow.

At St. Regis, the initial allocation is admittedly an approximation—albeit a carefully calculated one—and as more experience with the system is gained, changes will undoubtedly be made.

What Are The Advantages? . . .

St. Regis points to many. Procurement's job will be made easier. When the inventory is made four years prior to harvest cut, the cutting budget will be drawn up and the company can thereby determine, year by year, about how much wood will have to be purchased outside.

Cutting and improving will be concentrated in one place, rather than scattered out as at present. Roads and other improvements will be completed well in advance of cutting and removal of wood from the forest will be much easier. Because of the controlled growth of the trees, pulpwood harvest is expected to increase from about eight cords per acre to 25 cords after the 30 year period. Because of concentrated cutting, the cost of pulpwood removal is expected to be considerably lower. And the cost of

administering the entire cutting plan should be less than under the present system of supervising scattered, isolated operations.

More Than Just Management . . .

St. Regis backs up this plan with its other forestry practices. It maintains one of the largest private industrial nurseries in the world at Pensacola (20 million seedlings) and another at Lee, Fla. (14 million seedlings by next year). It takes part in a genetics program designed to produce high quality seed from superior trees. And, as a bolster until its genetics program is fully underway, it is collecting as much seed as it can from natural seed production areas which it is establishing in its pine stands.

The company also maintains a system of checks and balances through a continuous forest inventory system. Tree-by-tree data is kept on more than 2,000 mark sensed IBM cards and inventory control summaries are electronically calculated on IBM machines.

Two forest engineering staffs continue to study the management program and make changes when necessary. Headed by George Park in Jacksonville and Bob Hyde in Pensacola, the men presently doing the job are Joseph Jones, Bob Holland, Trygve Maehlum, Jim Edson, Bob Elliott and Sheldon Morris.

ST. REGIS PAPER COMPANY : CUTTING UNIT APPRAISAL SHEET
Southern Woodlands Division: WORKING CIRCLE: _____ CUTTING UNIT: _____
Forest Engineering Dept. : APPRAISAL BY: _____ DATE: _____

UNIT VOLUME SUMMARY

	PINE	HARDWOOD	CYPRESS	TOTAL
	– standard rough cord volumes –			
Pulpwood size; 6-11				
Sawtimber size; 12+				
TOTAL				
Per acre volumes				
Vol. composition in %				

Source of vol. data:

MERCHANTABLE VOLUME QUALITY DESCRIPTION

PINE :
HARDWOOD:
CYPRESS :

DISTRIBUTION OF MERCHANTABLE VOLUME

PINE :
HARDWOOD:
CYPRESS :

SUMMARY OF ESTABLISHED PLANTATIONS

DATE												
ACRES												
C.T.												
SITE												

PINE REGENERATION ANALYSIS: Satisfactory Restocking to Pine — Acres

Condition	:Seed-Tree : Chance	Planting Required: No SP	Lt. SP	Md. SP	Hy. SP	REMARKS
Partially restocked:						
Non-stocked :						

HARDWOOD RESTOCKING: Species, Condition & Density; Describe:

ACREAGE SUMMARY

Condition	Acres	%
FOREST		
Tot. Forest		
NON-FOREST		
Tot. N.F.		
TOT. ACRES		

MANAGEMENT ENGINEERING ANALYSIS

(1) H.C. Priority: _____ Basis: _____
(2) E.I.R.: _____
(3) T.S.I.: _____
(4) T.I.S.:
(5) OTHER MANAGEMENT FACTORS-Observations & Recommendations: _____

Clinical Records are Kept on Each Unit . . .
This one is used in forest inventory.

10 More Tons of Logs Per Acre is Possible

Ten more tons of logs or the equivalent of three more tons of kraft pulp, to the acre, may be achieved in the Douglas fir forests of Vancouver Island if experiments carried out by MacMillan & Bloedel in the field of artificial regeneration fulfill their present promise.

Douglas fir trees on test plots belonging to the company have brought spectacular seed-bearing cone production after artificial stimulation by chemicals and growth hormones.

In 1956, at an elevation of 2,000 feet near Duncan, there was no natural seed, but the experimental plots under artificial stimulation produced a bumper crop on all trees. Cones from the treated trees were bigger than natural cones, and contained twice as much seed. At other locations on Vancouver Island similar tests have been successful on a range of elevations and tree sizes.

The fact that most logging on Vancouver Island is carried on above 1000 feet and that natural cone crops are infrequent at lower levels makes this discovery all the more significant. Silviculturists estimate that there have been only one or two adequate Douglas fir cone crops in the last 40 years at these elevations, and as a result natural regeneration is delayed and in recent years there has been insufficient seed to maintain essential planting or seeding projects.

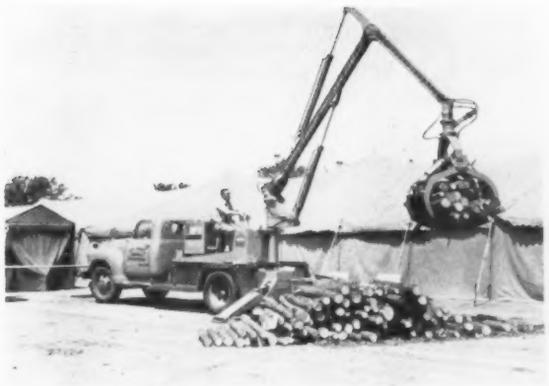
"It appears that we can now speed up production of tree seed which will enable prompt reforestation of lands following logging," says Ian Mahood, forestry manager for MacMillan & Bloedel.

New Lumber Association Exec

Mortimer B. Doyle, 40, of Evanston, Ill has been elected executive vice president of National Lumber Manufacturers Assn., Washington, D.C., announces NLMA president Walter M. Leuthold of Spokane, Wash. Mr. Doyle was manager of Midwest operations of the National Assn. of Manufacturers. He succeeds Leo V. Bodine, who recently resigned to become a vice president of Diamond Match Co.

Comics Put the Story Across

International Paper Co., New York City, uses comic books to present the company's forestry program. Titled "How Trees Put the Rain to Work," they are accompanied by instructions to teachers telling them how to use the book, giving background on the nation's dependence on water and trees, and showing them what they can do to help preserve them.



Pulpwood Equipment at Work . . .
New Orleans lakeside resort was locale for pulpwood equipment displays at Southern Pine Assn. meeting. At left, Hopto loader, by Badger Machine Co., for loading and unloading wood for truck fleets. At right, Hiabob loader (Diesel Power Equipment) on truck converts vehicle to versatile loading and hauling unit.

More and Better Chips Star in South

"Getting extra dollars" is hot topic for delegates at the Southern Pine Assn. meetings and equipment show

—New Orleans

● Probably the most popular subject at the 42nd annual of the Southern Pine Association, held here Apr. 8-10, was greater utilization of the timber harvest—"getting money back" or "getting extra dollars" by complete forest utilization.

Delegates from International Paper, St. Regis, Dierks and other companies with interests in pulp and paper, were here. Where until just a few years ago most of the emphasis at the Southern Pine sessions was on sawmilling and lumber, it has shifted now to pulp mill supply and pulpwood. PULP & PAPER editors found nearly everyone was talking about converting waste products into chips.

By the end of 1957, the Southern lumber industry is expected to have a pulp chip capacity of more than 1,000,000 cords per year, in addition to providing one third of the nation's lumber. Other valuable products are being derived from sawdust and bark. Use of the whole log is the goal.

This theme was accented in the address of outgoing president Leon Clancy, Decatur, Ala., lumberman, who became chairman. Q. T. Hardtner, Jr., Urania, La., is the new president. Mr. Clancy also said "a distinct trend toward mechanization becomes more surprised each year."

Northern Interest, Too . . .

With the latest mechanical equipment on display, and with talk of new methods, this meeting drew people from the North, too. Surprising how much interest from outside the South. The word is getting around that this area is a mecca for new methods.

There was news here that lumber people up in the Lake States are going in for portable chip plants. One at Slinger, Wis., a fair sized operation, is chipping slabs for the Ruberoid Co. mill at Joliet, Ill., and getting "a good price." There were two men from True Temper Corp., which is planning a Union City, Pa., plant to make wooden handles for its tool products. Even before the plant is built, it had men here, hoping to learn, and to find a waste wood customer.

"Under the Big Top" . . .

A huge machinery exposition was held at the New Orleans lakefront resort site of Pontchartrain Beach Apr. 5-9. Under the "big top" and in an enormous paved area, a march of automation was staged. Primary emphasis of the exposition was on various processes of mechanization, automation and total utilization.

Mechanization displays included all phases of forestry and lumber processing from planting to shipping the finished product. Huge crawler type tractors with land clearing attachment and smaller pneumatic tire equipment for use in planting seedlings were shown.

There was a beehive of power saws for every purpose: Small bow type saws for pulpwood—one-man saws for practically all sizes of logs and two-man saws for the largest of logs. Also shown were various types of power units for girdling trees and power saws for pruning limbs.

There was a large display of log loading and log handling equipment on the outside display area. Large cranes, fork lift trucks and fork lift trucks with grab attachments could handle a dozen large logs. Other demonstrations featured high speed skidders for towing logs out of the woods to loading station and special pulpwood handling equipment which could handle up to 6½ tons of pulpwood at a time.

For handling in woodyard and at mills, new equipment was in evidence. One model with a live load

Head Men of SPA
LEON CLANCY of Alabama (left), presided and became chairman as Q. T. HARDTNER, JR. (right), moved up to the presidency.

rack was completely mechanized. A hydraulically operated or electrically operated log turner turned the log and loaded it onto the carriage and logs were secured to the carriage automatically with hooks or dogs that were operated by compressed air. Practically all equipment shown included some type of automatic log handling.

Total Utilization . . .

Machines showed how the entire log could be made into a useful product. Foremost of these, and probably most spectacular, were debarkers. For every thousand board feet of lumber cut, from ½ to 1 cord of wood chips or pulpwood is produced. (One cord equals approximately 5000 lbs. of chips.) A number of chippers were also shown with emphasis on up-grading the quality of the chips.

Emphasizes Research . . .

In his talk, Mr. Clancy emphasized research needs.

"I would like to remind every one of you that we can't close our eyes to what our competitors are doing. Other materials, like aluminum, are pouring millions of dollars into their planning to take our markets away. A recent announcement refers to a multi-million dollar research program by one aluminum manufacturer alone, for the single purpose of developing materials for the home, from the ground up.

"There are other incentives for broadening the base of our program. Most of you are familiar with the preliminary report on the nation's timber resources issued by the U.S. Forest Service. This report revealed what we've been preaching for years, that the growth of Southern pine sawtimber has been exceeding cut each year, but it's more official now. The Timber Resource Review says that we're growing more than we're cutting or about 2½ billion board feet."

Other new officers of the association are M. W. Smith, Jr. of Jackson, Ala., first vice president, and W. R. Warner of Warren, Ark., second vice president. Re-elected were: M. L. Fleishel, Jacksonville, Fla., treasurer; S. P. Deas, New Orleans, La., secretary; Charles E. Dunbar, Jr., New Orleans, La., general counsel; and T. H. O'Melia, Fulton, Ala., vice president in charge of trade promotion.

APA Engineers Take Part

HENRY M. SHEPARD (left) and JAMES HOLEKAMP (right), logging engineers for American Pulpwood Assn., were on hand for the Southern Pine Assn. events. Mr. Shepard serves in Lake States and Mr. Holekamp in the South.

Carnival Atmosphere for Pulpwood Show

Amid circus tents and gay umbrellas, major interest in Southern Pine Assn. equipment show was in pulpwood handling equipment. Here is section showing International Harvester forest industry machines.

State Lab Makes Survey of Bark Presses

Various types of presses for effectively removing water from residue bark are considered in a review made by Oregon Forest Products Laboratory, Corvallis, Ore. It points out that the bark takes on value as fuel which solves disposal problems.

The OFPL report says Fulton Iron Works makes a press which passes bark through pressure rolls operating somewhat like a clothes wringer, and which are used in eastern U.S. and Canada. Another type cited by the report was the American Defibrator press with a tapered stainless steel screw applying the pressure, installed in Pacific Northwest mills. The Nekoosa press, installed at several eastern mills, uses a ram to apply pressure to confined bark, says OFPL. Still another bark-dewatering press is manufactured by Farrel-Birmingham Co.

Promotions by Crown Z

OTIS HALLIN (left), goes to San Francisco as asst. vice pres., timber, for Crown Zellerbach Corp. HUGH HODGINS succeeds him as mgr., timber, for Crown Zellerbach Canada, Ltd., in Vancouver, B.C.

New Radio Band Use Proposed for Forest Work

Forest Industries Radio Communications, the national organization through which forest industry radio communications interests are represented, has applied to use space in 450-460 mc band. According to Elmer Surdam, Eugene, Ore. (10 East 18th Ave.), this space is currently employed on developmental basis by many services.

The FIRC committee states: Because an important part of growing and harvesting forest crops is carried on away from cities, activities in this field depend heavily on communication facilities which the industry must provide for itself. In the past this industry has made extensive use of the 72-76 mc frequencies for control and relay requirements. On behalf of television FCC has, however, placed such severe restrictions on the non-broadcast use of the frequencies as to make them unavailable in many areas and too burdensome for use in others.

Photogenic Mill of CZ at Port Angeles, Wash., with rugged Olympic Mountains for backdrop

A VISIT TO FARTHEST WEST U.S. MILL

Western Farm Wood for Newsprint

Push-button plant at Crown Z's Port Angeles mill has ingenious method for slashing and splitting wood

Giant logs from the rain forests of Crown Zellerbach's Neah Bay Tree Farm on the Pacific slopes of the Olympic Peninsula provide the main source of fiber for Port Angeles.

Another important source is so-called farmer wood. This supply is being increased, and about 1,000 cords a week will come from farmers in the area. This wood arrives in 4- and 8-ft. lengths, and is from 4 to 22 in. in diameter. It is mostly red fir, although some hemlock and white fir is purchased.

An ingenious arrangement for speedy and efficient slashing and spliting of farmer wood ahead of the drum barker at Crown-Z's Port Angeles, Wash., mill has proved its merit.

That's Second Growth Douglas Fir

F. W. (FRAN) FLYNN, resident manager at Port Angeles, might be saying, "This farmer wood comes mighty big."

Resident Manager F. W. (Fran) Flynn showed a PULP & PAPER editor the two-step operation which is installed at the point in the yard where a Pettibone-Mulliken Cary-Lift is used to unload farmer wood from trucks. The new equipment will facilitate use of about 1,000 cords a week of farmer wood, a substantial portion of mill requirements. Eight-foot logs are cut into 4-ft. lengths before grinding.

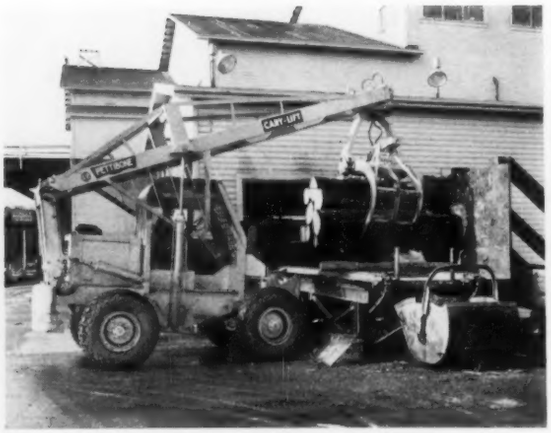
This farmer wood of the Pacific Northwest is a far cry from what is called farmer wood in the South, Midwest or East, as some of it comes in diameters up to 22 or 24 in.

A compact arrangement takes care of both splitting and slashing this wood. It was developed by the Central Engineering Division of Crown Zellerbach Corp., Seattle, headed by Wilbur Lowndes.

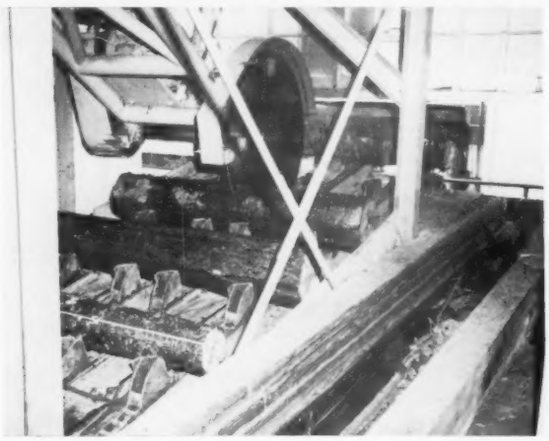
There is a straight slashing arrangement for any wood under 11 in. in diameter that cuts the 8-ft. log into two pieces, a size the grinder will take. About 80% of the farmer wood will be within this diameter.

Wood over 11 in. diameter is transferred by jump rolls into a splitter saw, at right angles to the slasher-saw

First, Farmer Wood is Unloaded from Truck . . .
In one bite, Pettibone-Mulliken Cary-Lift takes whole cord of 40-year-old Douglas fir, harvested in thinning operation.



Next, Cary-Lift Drops Wood onto Conveyor . . .
Eight-foot wood starts through new slashing and splitting unit.



Then, Wood under 11 in. dia. Is Cut in Two . . .
Into 4-ft. lengths which grinder will take.

But Wood over 11 in. dia. Goes to Splitter
It isn't quite split in two and goes back to slasher. With push buttons and levers one man operates entire slashing-slitting plant.

rolls. The wood advances into this splitter saw to a point just short of being completely split in two. The chain reverses automatically, and the log is backed out of the saw. Thus it still clings together, by virtue of the few unsplit inches, and it is then carried through the slashing arrangement as a whole log. When the log falls from the conveyor into the barker, it breaks apart.

But this isn't all. If the wood is over 14 in. diameter, it is automatically turned a quarter turn after being almost split in one direction. It runs into the splitter saw again—and again almost to the point of being completely split, but not quite. The chain again reverses and automatically carries it back through the slasher. When it is slashed in two, the forward section, where four pieces are clinging together, will tumble into the barker and break apart.

The whole arrangement of slashing and splitting is a one-man operation. A control board and push-button system is devised so that one operator can quickly route logs as desired.

The Cary-Lift adds to the efficiency of the operation, as one man on the Cary-Lift unloads the wood and puts it onto the chain that starts it through the slasher or to the splitter.

Personnel . . .

Mr. Flynn has been resident manager at Port Angeles since April 1956, having been promoted from assistant manager at the Port Townsend, Wash., mill. Previously he was technical assistant to kraft superintendent at Camas. A Minnesota U. graduate, he went west in "depression" years. He says Dr. Ward Harrison, now Riegel Vice Pres., and Dr. Lathrop, later head of U.S. Agriculture Residues Research at Peoria, Ill., were at Camas, got him interested in papermaking there. He knew Dr. Harrison through mutual family friends.

The new assistant manager at Port Angeles is Charles Wheeler, who was transferred from Camas. Les Warwick is plant engineer; Jim Wenger, technical supervisor; Jack Reiners, paper mill supt.; Orville Cauvel, sulfite supt.; Claire McCormick, groundwood supt.; John Grill, purchasing agent; Leslie Day, office manager; and Louis Spicer, personnel and safety supervisor.

New Manual for Radio Communication

Forest industries using radio communication systems will be interested in a Conelrad manual issued by the Federal Communications Commission. The new guide is to help licensees understand the new rules, under which the Conelrad radio alert and Conelrad radio all-clear may be received by radio stations in the industrial services and to describe operating procedures during a Conelrad radio alert.

In general, all radio stations in the Industrial Radio Services are required to make provisions to receive the Conelrad radio alert.

STOUT: "You have to make calls to have results. . . ."

TOWER: "Meet the people face to face. . . ."

MADDEN: "Our public relations need improvement. . . ."

SUTLIVE: "Shoot with a rifle, not a shotgun. . . ."

STITT: "Do good—but get credit for it. . . ."

Public Relations—

Some Experts Talk Over Problems

Here are some tips on how the industry can best overcome anti-industry legislation; adverse newspaper opinions

● Here are some Southern industry "headaches" which need "aspirin" that cannot be manufactured in laboratories or by highly trained technical staffs:

Anti-industry legislation which would limit the amount of land paper companies may own; heavy and controversial taxes; adverse attitudes of some newspapers; need for more technicians and engineers.

A panel on public relations at a recent Southern Pulpwood Conservation Assn. meeting in Atlanta gave views on how these problems can be attacked. Moderator was James L. Madden, president of Hollingsworth & Whitney when it merged with Scott and now vice president in charge of Scott Timberlands and operations.

The experts: John Tower of International Paper Co., who began his career with Nashville "Banner," had long experience in public relations with aircraft companies; Kirk Sutlive, onetime president of Georgia Press Assn. and p.r. director for Union Bag-Camp; Maynard Stitt, p.r. manager for St. Regis at Pensacola, formerly with United Press, Associated Press, Macon "Telegraph" and for 15 years a p.r. man in New York; Ed Stout, p.r. director for Bowaters Southern Paper Corp., onetime farm editor for the Atlanta "Journal" and former member of the staff of Georgia Forestry Commission.

Capsule Comments . . .

MR. MADDEN: "Because of unfriendly legislation . . . bitter editorials against our land acquisition . . . our public relations need a lot of improvement. The public is going to make up its mind and we should take the opportunity to see that it's well enough informed."

MR. TOWER: "When it is necessary to change a person's attitude, it is often easier and more satisfactory if that person can be met face to face. There must be 700 or 800 rural communities in the South where there is a permanent forestry operation supported by this industry . . . these communities should be focal points in efforts to create a favorable public opinion. Men in charge of these operations have a responsibility . . . they are the industry to these communities."

MR. SUTLIVE: "In planning a program don't spread yourselves too thin. Doing a couple of things well is more beneficial than undertaking an area of things none of which will bear results unless given proper attention. Shoot with a rifle, not a shotgun."

MR. STITT: "Public relations is doing good—and getting credit for it. I have a devil's own time keeping up with the good things our woodlands people are doing; to say nothing of getting them proper credit for it. These good deeds are like dropping a rock in the pool . . . you set up ripples and it's the ripples that do the good at the shore, not the rock. Our part of the business is to try to help those who have other jobs to do."

MR. STOUT: "I am reminded of the post card with the black cat and eight little kittens sitting on a fence and the slogan underneath which says, 'You have to make calls to have results.' That is the way it is with newspapers. You have got to meet these people. I think we run a risk of losing the ball and getting very little credit for the industry for the billions of trees we are planting every year because of the Soil Bank. We have also got to be more careful about the terms we use—make sure the man on the street knows what we mean."

Some Pinpoint Questions . . .

"How to get company ownership story across to public":

Mr. Stout: "Point to the low 40% production record on small woodlands, compared to about 96% on company lands. Explain it is essential for the company to own some land and manage it intensively to insure the 50 to 200 million dollar investment in the mill."

Mr. Stitt: "Ask the small landowner: How much is your timberland worth today? How much was it worth before the paper mill came here?"

NOW!

A non-poisonous aspen-debarking chemical

D-BARK

TRADE MARK

You're barking up the *right* tree when you insist on ACP's new aspen-debarking chemical, D-BARK. Here's why:

1. **Non-poisonous.** No special safety equipment is needed. D-BARK is harmless to handle.

2. **Easy application.** Lower labor costs. D-BARK requires no laborious girdling or frilling. Simply spray or brush it directly on the outside of the bark.

3. **Quick kill.** D-BARK kills the above-ground growth of aspens quickly. Tops die in about a month.

4. **Permanent bark separation.** Aspen treated properly with D-BARK can be cut in the fall, winter or spring following treatment. Peels easier, more rapidly and more efficiently than untreated pulpwood.

5. **No loss of fiber strength.** A paper company's recent laboratory tests of pulpwood treated with D-BARK revealed no loss of fiber strength.

If removing bark from aspen is your problem, get D-BARK, the new *non-poisonous* debarking chemical.

Write us today for free D-BARK bulletin

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Agricultural Chemicals Division

St. Joseph, Mo. • AMBLER, Pa. • Niles, Calif.

WEEDONE ACP WEEDONE

Originators of 2,4-D and 2,4,5-T Weed Killers

"How to explain hardwood removal to public":

Mr. Tower: "One of the worst mistakes is to let a community become aware of hardwood girdling by accident. It should be properly explained before the program starts, not after somebody finds out about it. I can't think of anything that would make a worse impression than a road along which people would see trees killed by girdling. It looks wasteful and brutal."

Mr. Stitt: "Let them see how it is done with demonstrations."

"Contributions":

Mr. Tower: "There are always going to be more requests than can be met. Give the local man a degree of responsibility so he can say no or yes. Then he becomes a company man, not a representative of absentee-ownership who must check with New York or Mobile every time he gets a request."

"Rural editors":

Mr. Stout: "These editors are not antagonistic when they take their stands . . . if they misstate facts, they have inaccurate facts. They think they are raising an issue for the benefit of the county. But they are honest straight shooters and they try to do what is right. Make sure they have all the facts before they start writing."

Pulpwood Personals

PAUL WONDERLY, former president of Portola Tree Farms, becomes general manager of Klickitat, Wash. operations of J. Neils Lumber Co. division of St. Regis Paper Co., a position formerly held by **WALTER H. RATHERT** who succeeded **PAUL NEILS** as division president when latter became chairman of the board. . . .

Dr. **THOMAS C. ADAMS,** former asst. professor of forest management at Oregon State College School of Forestry, joins forest economics research staff of Pacific Northwest Forest & Range Experiment Station, according to **R. W. COWLIN,** station director. . . .

Dean **W. F. McCULLOCH,** School of Forestry, Oregon State College, was elected chairman of Keep Oregon Green Assn., succeeding **E. P. STAMM, CZ** vice president who headed the group for past two years . . . **TRULS FREDRIK MARTHINSEN,** of Bergen, Norway, has joined the Crossett Co. forestry div. as an exchange forestry trainee under the auspices of the American-Scandinavian Foundation of New York. He worked for Weyerhaeuser Timber Co. on the west coast before coming to Crossett . . . **RALPH LAW,** former head forester of Olin Mathieson Huttig, Ark., operations, has been promoted to asst. pulpwood procurement mgr. at West Monroe, La. **CECIL MAY** replaces Mr. Law at Huttig.

MR. ALEX PANCRAZI (left), Pisa Univ. (Italy) graduate, Chief Chemist, Eastern Wine Corp., Bronx, N.Y. (Right), Michael De Piano, N.Y. representative, Cooper Alloy Corp.

PANCRAZI OF CHATEAU MARTIN (Eastern Wine Corp.) tells why he specifies "*Cooper Alloy Only*" on stainless steel valves and fittings

Q. Mr. Pancrazi, why have you changed to stainless steel valves and fittings at Chateau Martin?

A. To assure product purity. Other metals can cause minute contamination reducing clarity and brightness; stainless steel does not.

Q. What valve model do you find most suitable?

A. After extensive testing, we picked a renewable-disc inside-screw globe valve—Cooper Alloy only.

Q. Why "Cooper Alloy only"?

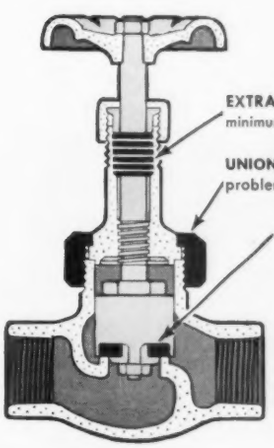
A. Because of three features I find combined nowhere else: renewable retained disc; union-bonnet construction; and extra-deep square-compression stuffing box.

Q. Why is each of these features important?

A. Soft disc gives better seal; retention in metal jacket prolongs its life. When disc replacement is needed, union-type bonnet eliminates difficulties normally found in screwed-in bonnets, removes another threaded joint from product contact. Extra-deep stuffing box with unique square compression reduces maintenance, gives tighter seal at stem.

Q. Don't any competitive valves possess these features?

A. Not one has them all. That's why, to maintain our product contamination-free and to reduce maintenance costs, we insist on "Cooper Alloy only."


EXTRA-DEEP STUFFING BOX holds minimum 6 turns Blue African asbestos
UNION BONNET JOINT eliminates problems found in screwed-in bonnets
RETAINED RENEWABLE DISC for tight seal and long life
COOPER ALLOY Figure 15RD Globe Valve, inside screw rising stem, 200-lb. service, screwed ends, renewable retained disc of composition you specify.

YEARS AHEAD IN DESIGN SUPERIORITY! No matter what your valve type—globes, gates, angles, checks, or Y's—the Cooper Alloy model's outstanding design features will be important to you. Cooper Alloy, with 35 years of pioneering experience in stainless steel, does not merely adapt existing brass and iron valve patterns; it creates valves *designed to be cast in stainless!* **Check the special design features of valve shown at left.**

As the little CA man below is saying: "*You Can Tell A Cooper Alloy Valve As Far As You Can See It!*" Write today for *your* copy of our folder "Design Factors In Stainless Steel Valves." The Cooper Alloy distributor near you will be glad to show you the complete line of Cooper Alloy valves *and fittings*, and their advantages. He can serve you promptly from local stocks.

COOPER ALLOY

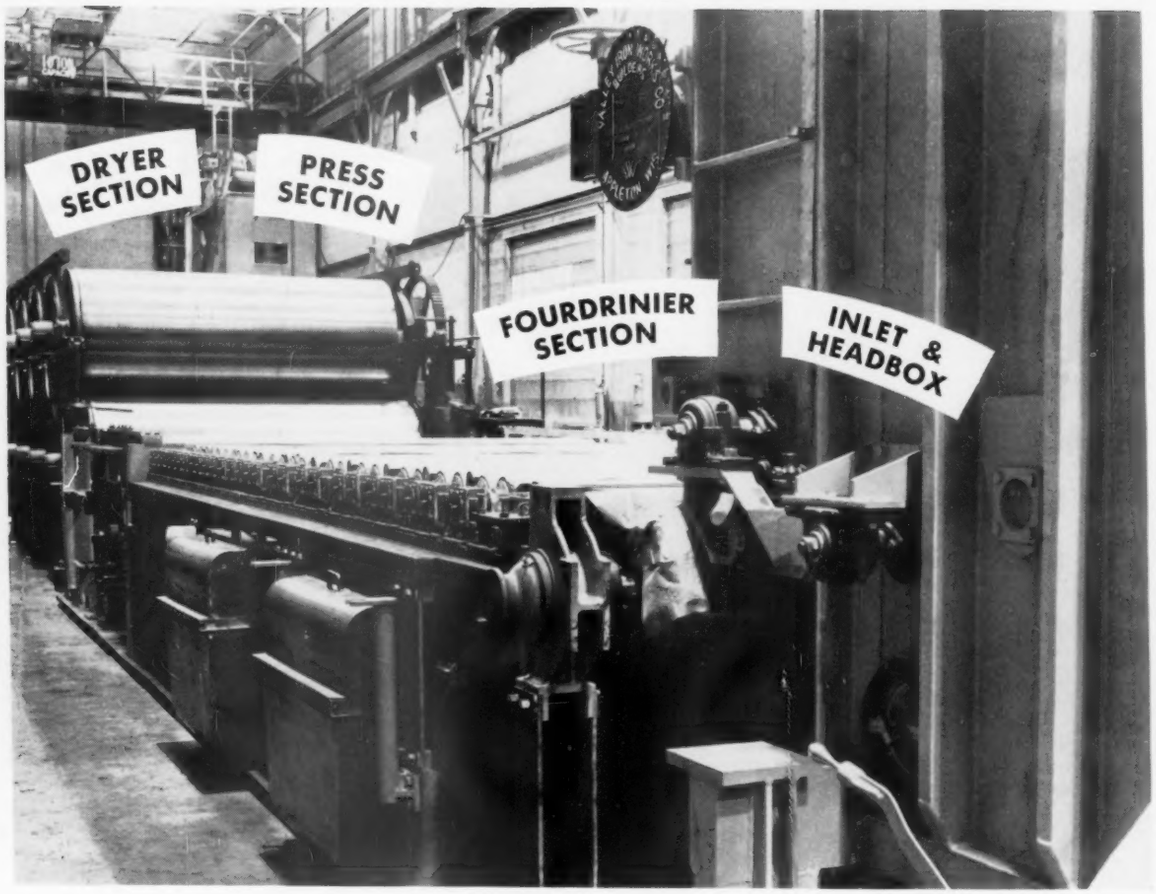
Corporation • Hillside, New Jersey

VALVE & FITTING DIVISION

THIRTY-FIVE YEARS OF STAINLESS STEEL PIONEERING

another

PAPER MACHINE REBUILD.....



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engineered and built by... **VALLEY**

VALLEY IRON WORKS CO. APPLETON, WISCONSIN

Canadian Representatives: Pulp and Paper Mill Accessories Ltd., P.O. Box 903, Station "O" Montreal 9, Quebec

New from Standard Oil

RYKON

GREASE

Standard scores major breakthrough in grease technology to bring you better lubrication . . . help you make important savings in grease use, application and inventorying.

Scientists at Standard Oil have developed a new non-soap, organic, grease thickening agent. This, plus other improvements in grease formulation, is now available in a new line of Standard greases named RYKON.

Mechanical stability—RYKON Greases show little change in consistency even under severe working.

Oxidation stability—Exclusive thickener in RYKON Greases inhibits oxygen absorption. This prevents costly corrosive action on bearings.

Water resistance—Extremely resistant to water washout.

High temperature stability—RYKON Greases have an ASTM dropping point of 480° F. They have exceptional heat stability.

Resistance to change—RYKON Greases remain soft and grease-like at sustained high temperatures, continue to give thorough lubrication.

Low temperature stability—RYKON Greases work readily at low temperatures, lubricate from a cold start.

Oil separation—RYKON Greases exhibit strong resistance to bleeding.

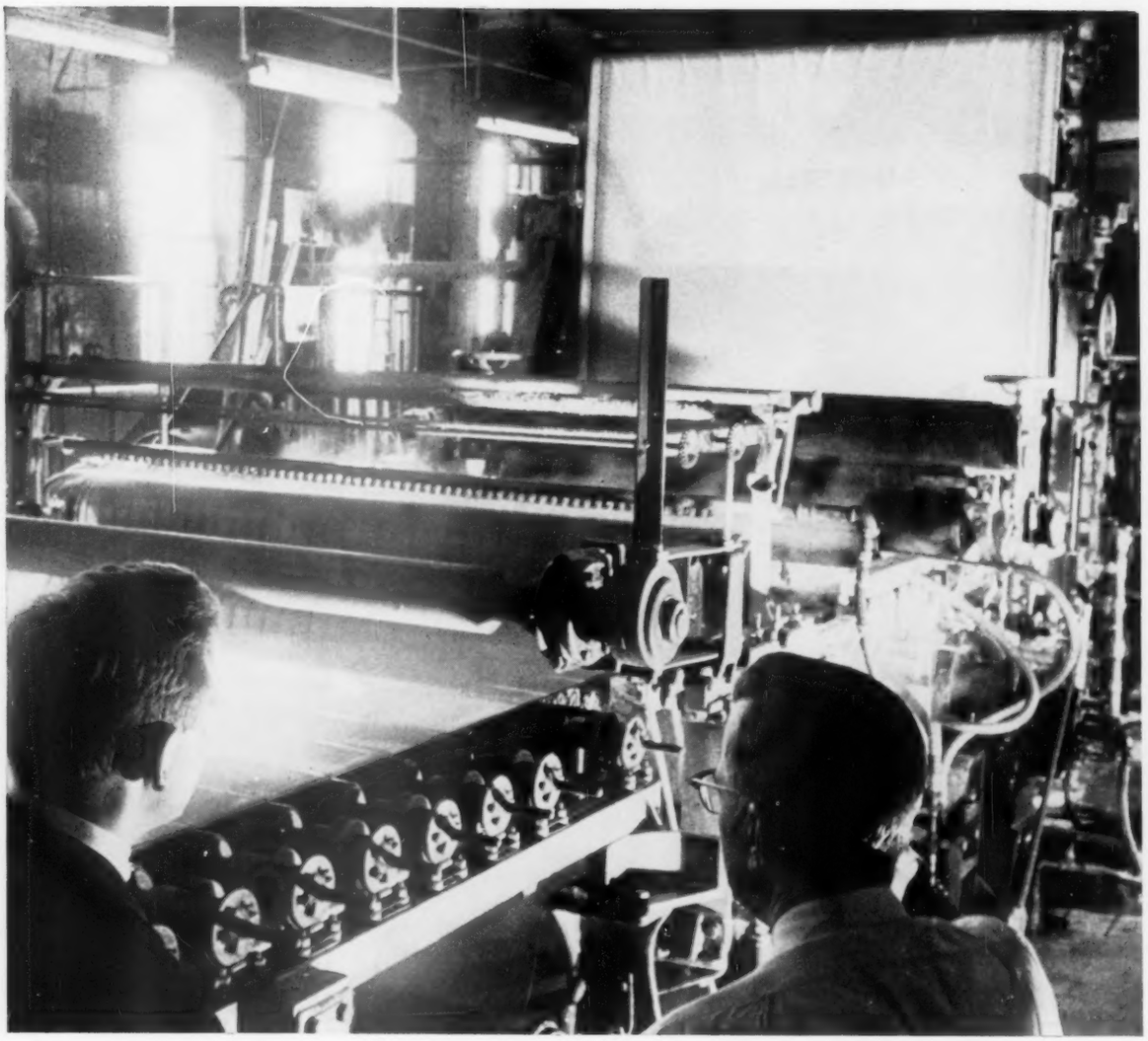
Rust preventive properties—RYKON Greases demonstrate superior natural qualities in prevention of rust.

To meet specific grease lubrication problems, greases in four Regular and three Heavy Duty grades are available. With a single RYKON multi-purpose grease doing all jobs in the plant, there's no wrong grease to use. Money invested in grease inventories is cut, storage and application facilities are reduced. Maintenance training is simplified.

Get the facts about RYKON Greases from the industrial lubrication specialist at the Standard Oil office nearest you in any of the 15 Midwest and Rocky Mountain states. Or write Standard Oil Company, 910 South Michigan Avenue, Chicago 80, Illinois.

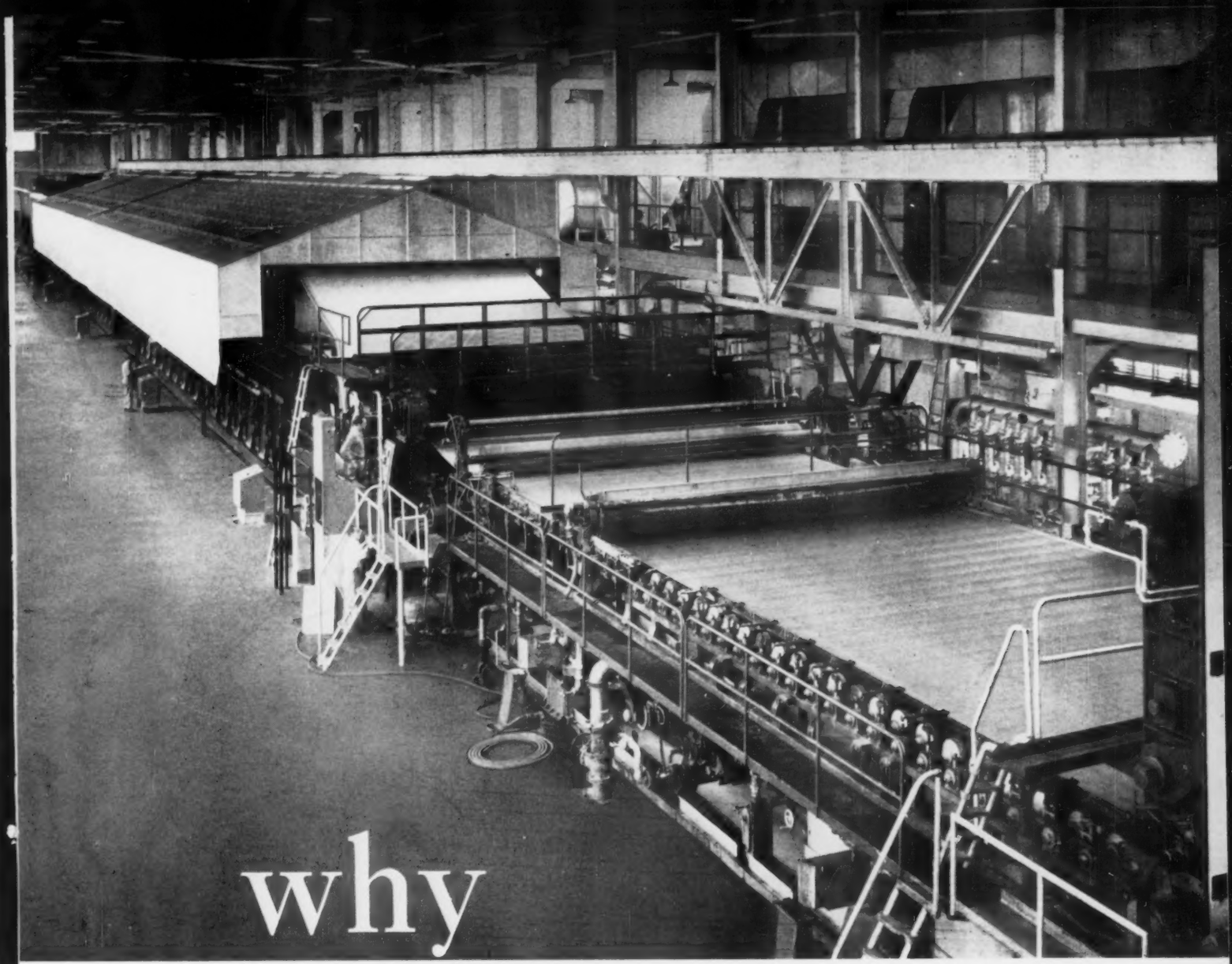
STANDARD

STANDARD OIL COMPANY
(Indiana)



Wherever you want to talk felts, you'll find the Appleton man who calls on you a good listener. His aim is to deliver what you need to do the job better. That takes some doing. It starts with intelligent listening . . . the ability to understand *your* problems and interpret them to get the most effective use of our modern research facilities, design experience and skilled craftsmanship. It produces felts that pay off for you on the paper machine. Appleton Woolen Mills—*a working partner with the paper industry*—Appleton, Wisconsin.

Appleton felts



stainless equipment helps you run your mill at a profit

The soundest way to beat rising costs is to install trouble-free plant units that enable your men to devote their energy to maintaining quality and high output. Stainless equipment does just that.

Some of the reasons for stainless steel's exceptional performance in the paper mill lie in its high strength, rigidity, corrosion and erosion resistance, freedom from buildup, and very easy cleaning. Boiled down, these reasons equal one important fact: Crucible stainless helps you run your mill at a profit.

Why not let an experienced Crucible engineer work with you to make the best, most economical use of stainless in your mill? And write for a copy of "Making the Most of Stainless Steels in the Pulp and Paper Industry"—it's 20-pages of useful data. *Crucible Steel Company of America, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.*

CRUCIBLE first name in special purpose steels

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Canadian Distributor—Railway & Power Engineering Corp., Ltd.

POSITION WANTED
EXPERT IN INDUSTRIAL
AIR HANDLING
Seeks connection with ducts in your paper mill. Ready to do hard work at low pay. Specialties include supplying air up to 500,000 cfm for ventilation systems, units, hot air systems, cooling, air washers, air conditioning units, drying, etc. Have long life line and run quietly; husky and require little maintenance. Excellent performance characteristics include broad, sky-high efficiency curve, stability from free delivery to shutoff. Am non-overloading, regardless of system resistance. References, many of the biggest installations and contractors rate my performance A-1.
Address replies in confidence of best air buy to:
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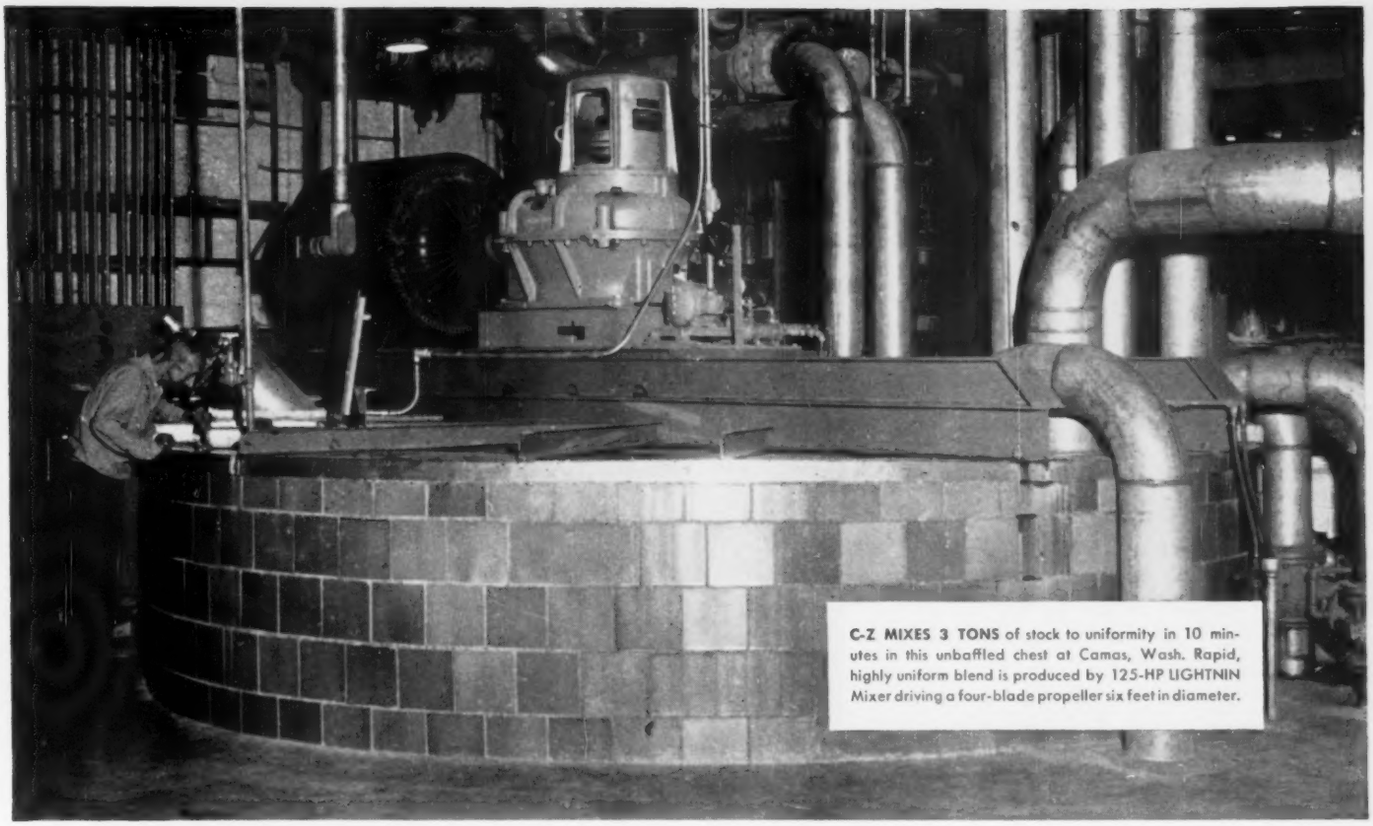
VENTILATING AIR CLEANING AIR TEMPERING INDUCED DRAFT EXHAUSTING FORCED DRAFT COOLING HEATING PRESSURE BLOWING



C-Z MIXES 3 TONS of stock to uniformity in 10 minutes in this unbaffled chest at Camas, Wash. Rapid, highly uniform blend is produced by 125-HP LIGHTNIN Mixer driving a four-blade propeller six feet in diameter.

New mixing unit puts **accuracy** *into Crown Zellerbach stock chests*

How can you minimize the effect of changes in stock consistency?

Here's how Crown Zellerbach does it, with a 125-horsepower LIGHTNIN Mixer, on No. 9 Mixing Chest at the company's large Camas, Wash., mill.

Mixes 3 tons in 10 minutes

This chest handles 25 batches or 75 tons of 3½-4% stock per 24-hour day. Furnish usually consists of groundwood and special bleached stocks of varying consistencies. Cycle allows 30 minutes for filling the chest, only 10 minutes for blending, 10 minutes for pumping out to the first beater chest.

In 10 minutes or less, the LIGHTNIN Mixer equalizes three tons of stock and *keeps* it equalized. During blending, *uniformity of stock varies less than 0.2% between any two points in the chest at any time.*

No guesswork

This high uniformity eliminates "ups and downs" in consistency of stock leaving the chest. It insures most uniform possible feed to the beater system. A consistency regulator is used to control finished batch before stock is discharged to chest.

Measurable results

Want to get performance like this out of your chests? Put LIGHTNIN Mixers into them. Get *results you can measure*—in terms of uniform stock, shorter blending time, tighter control of color, less machine downtime.

For the facts on stock-chest mixing that does what you want it to do, call in your LIGHTNIN Mixer representative. You'll find his name in Thomas' Register. Or write us direct.

Lightnin® Mixers

MIXCO fluid mixing specialists

FOR LATEST MIXING INFORMATION and full description of LIGHTNIN Mixers, send for these helpful bulletins:

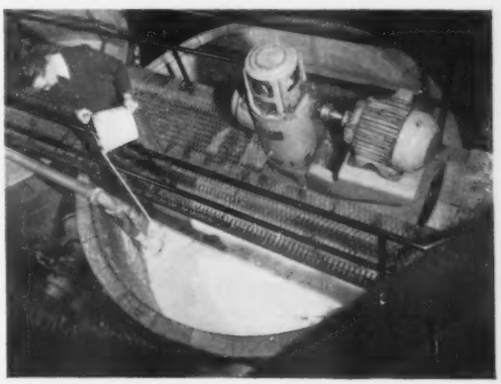
- ☐ B-102 Top or bottom entering; turbine, paddle, and propeller types: 1 to 500 HP
- ☐ B-103 Top entering; propeller types: ¼ to 3 HP
- ☐ B-108 Portable: ⅛ to 3 HP
- ☐ B-104 Side entering: 1 to 25 HP
- ☐ B-112 Laboratory and small-batch production types
- ☐ B-109 Condensed catalog showing all types
- ☐ B-111 Quick-change rotary mechanical seals for pressure and vacuum mixing
- ☐ Paper stock mixing data sheet for figuring mixer requirements

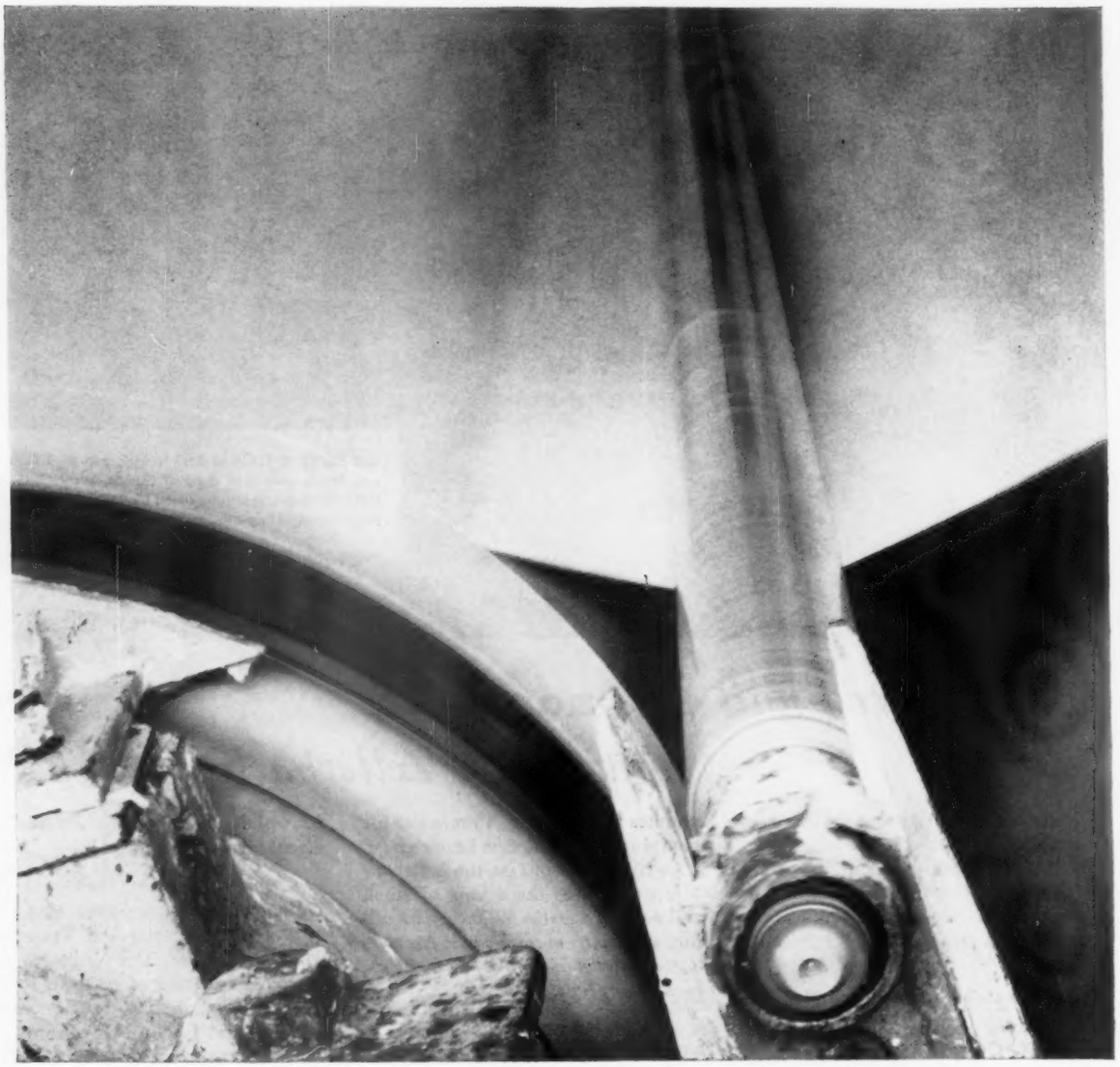
Check, clip, and mail with your name, title, company address to:

MIXING EQUIPMENT Co., Inc., 141-f Mt. Read Blvd., Rochester 11, N.Y.

In Canada: Greey Mixing Equipment, Ltd., Toronto 10, Ont.

IN BEATER CHEST or machine chest, you can bring stock to full uniformity in as little as 6 minutes with a LIGHTNIN. You can get uniform color dispersion in as little as 2 to 3 minutes.





80% of the papermaker's job is finished here, but poor roll performance can waste it . . .

At the point where the web leaves the wire to enter the first press section, rubber roll performance can make or break the entire operation.

Anything less than the best rubber covered rolls can result in reduced speed and lost production. They can result in excessive picking, uneven sheet formation, and breaks. Stowe-Woodward rolls, carefully selected for the specific conditions of stock and machine operation, are inconspicuous . . . except in the trouble-free production which they provide.

Complete roll processing plants at:
NEWTON UPPER FALLS, MASS.
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Craftsmen in rubber
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Strictly Personal

Midwest Medley

JOHN T. WALMSLEY, who recently became Chicago district mgr. for Hooker Electrochemical Co., has moved his family—wife and son—into a new home in La Grange, Ill. **BILL GILLESPIE**, his predecessor, now promoted to mgr. of sales administration for Hooker, sold his La Grange home and has one in Youngstown, N.Y., near Hooker's Niagara Falls headquarters. The Gillespies have two boys . . . **JOSEPH X. GUBBINS**, 61, former midwest mgr. for Peterson Parchment Paper Co., died at his Oak Park, Ill., home Apr. 27. . . .

JEROME BREZINSKI, formerly with Minnesota & Ontario Paper Co., is now with Beloit Iron Works . . . **JACK CHINN** is assistant to paper machine supt. Consolidated Water Power & Paper, Wisconsin Rapids, Wis. . . . **CHARLES MORTON**, production engineer for Kimberly-Clark in Chicago, was formerly with West Va. Pulp & Paper . . .

C. W. NELSON, chief engineer of Kimberly-Clark, was only a "cub engineer" at K-C's Kimberly, Wis., mill back when he got **MERRILL SCHEIL**, now director of metallurgical research, A. O. Smith Corp., interested in an engineering career. It happened at Mr. Scheil's father's home in Kimberly . . . **R. H. BEAUCHAMP** is transferred from Owens Illinois Glass Co., Valdosta Mill Div., to Tomahawk, Wis., as paper mill trainee . . .

WILLIAM W. CARR was named sales mgr. of Dunn Paper Co., Port Huron, Mich., taking over duties of **H. G. WALES** who died last Dec. . . . **JAMES BARRETTE** was appointed asst. supt. of steam power for Biron div. of Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis., according to **WARREN BEADLE**, Biron div. mgr. **PAUL BUSHMAKER** takes over the new position of water and results supervisor, Biron div. steam power dept. . . . **WILLIAM J. REDDINGTON** is St. Louis district sales mgr. mechanical goods div., U. S. Rubber Co., replacing **HUGH REYNOLDS** who retired recently. Mr. Reddington, a native of Passaic, N.J., has been with U. S. Rubber since 1933. His territory will be Mo., Ark., and part of Ill., Ind., Ky., Miss. and Tenn. . . .

A. C. PERSSON was named North Central district sales mgr. of pressure vessels and heat exchangers for A. O. Smith Corp. Mr. Persson, a former sales engineer for the firm's process equipment div., will continue to make his headquarters in Chicago. . . . **SYDNEY FERGUSON**, chairman of The Mead Corp., Dayton, O., since 1948, retired recently. Mr. Ferguson was born in 1891 in Newcastle-on-Tyne, England, came to the U.S. in 1913. . . . **HOWARD E. TETER** retired after 50 years with The Mead Corp. From 1930 to 1952 he was mgr. of the Chillicothe div. Since 1952 he has been pres. of The Chillicothe Realty Co., a subsidiary of Mead. . . .

K. M. CHERRY, who has been mill manager at Owens Illinois' Tomahawk, Wis., mill, becomes manager of the firm's linerboard mills, reporting directly to Vice Pres. **F. B. SCHELHORN** in Toledo, O., headquarters. . . . **J. E. HOEFT** succeeds Mr. Cherry as mill manager at Tomahawk. . . . **DONALD G. LINDERT** was appointed personnel relations asst. for Minnesota and Ontario Paper Co., announces **GEORGE G. GIBB**, director of industrial relations. Mr. Lindert was with the Green Giant Co. at LeSeuer, Minn. . . .

Employes at Charmin Paper Products Co., Green Bay, Wis., honored retired president, **JOSEPH M. CONWAY**, at a "Labor Honors Conway" dinner recently. Said the committee, "He is no longer our boss, but we are sure he will always be our friend and advisor." . . . **ARCHIBALD D. FRASER**, asst. treas. of The Mead Corp., Dayton, O., is promoted to insurance mgr. Mr. Fraser, a native of Woodstock, N. B., Canada, joined Mead's New York sales office in 1948. . . . **SKILLY T. KNOX** retired as midwest sales mgr. of boxboard, Stone Container Corp., Chicago, after 47 years in the industry. Knox' accounts will be served by his son, **PARKER KNOX**, and **MAYNARD LOUIS**. . . .

In Industry News

NORMAN F. GREENWAY (left), vice pres. and gen. mgr., boxboard and folding carton div., Robert Gair Group, Continental Can Co., Inc., New York, was re-elected pres. of Folding Paper Box Assn. for the third successive year.
FRANK G. HOUGH (right), retires as chairman of the company he founded, Frank G. Hough Co., Libertyville, Ill., subsidiary of International Harvester Co. Mr. Hough says he "hopes to remain in the manufacturing business," and will open an office at 158 E. Cook St., Libertyville, Ill.

In Ohio TAPPI Competition

(Left to right) W. H. FRIEND, Gardner Board and Carton Co., LOUIS VAN GUELPEN, Black Clawson Co., and GEORGE J. KOPP, Bauer Bros., gave papers for a new Ohio Section of TAPPI awards competition. WILLIAM DIETZ, DuPont Pigment Div., was in charge of program. Mr. van Guelpen delivered Donald Lehman's paper. Winner will be decided later by three judges of text and three of presentation.

Northeast Notes

WENTWORTH BROWN has been elected vice president of W. R. Grace & Co. He is gen. mgr. of the Paper Division of its Latin American Paper and Chemical Group. Before joining Grace in January, Mr. Brown was vice pres. of Canadian Chemical and Cellulose Co., Ltd., Columbia Cellulose Co. Ltd., and Celgar, Ltd. . . .

Nine major product sales segments have been reorganized by West Virginia Pulp & Paper Co., with the head of each group designated as a sales manager. They are **ROBERT S. KETTRICK**, container board; **ALFRED S. NALLE**, kraft paper; **GEORGE G. OTTO**, bleached

Strictly Personal

board; **ALBERT L. ARMITAGE,** commercial printing; **WILLIAM D. ASHTON,** converting papers; **MILLARD F. OWENS,** publications papers; **WILLIAM R. KAVANAGH,** merchant sales; **DONALD FRASER,** woodpulp and export sales; **F. W. LAWSON, JR.,** board products; and **DONALD E. HILLENBRAND,** marketing services. . . .

A baby boy, James Edward, arrived in April at the home of the **ED HUDSONS,** (he's technical sales rep for Lowe Paper Co.).

THOMAS M. BARRY is now mill manager of Great Northern Paper Co.'s East Millinocket, Me., mill. He moves over from Scott Paper's Hollingsworth & Whitney div., where he was manager of Northern mill. Before that he was manager of Fraser Paper, Ltd.'s Madawaska, Me., mill.

ROBERT B. CATHIE is now personnel director for St. Regis Paper Co. mills in Northern New York. He joined St. Regis in 1956 as asst. personnel director at Pensacola, Fla., formerly worked 13 years at the Atomic Energy Commission project at Oak Ridge, Tenn., in industrial relations. **LYNN ROBINSON** continues as personnel mgr. and **ORBBIE K. WEBBER** as asst. personnel mgr.

Researchers in the News

DR. GEORGE A. RICHTER (left), research consultant for Brown Co. of Berlin and Gorham, N.H., was awarded honorary degree of doctor of technology by Chalmers Technical Institute of Univ. of Goteborg, Sweden. Dr. Richter is the second American to receive this degree. He pioneered in present techniques for producing highly purified pulps from sulfite and sulfate bases and has been granted some 400 patents in the pulp, paper and allied fields.

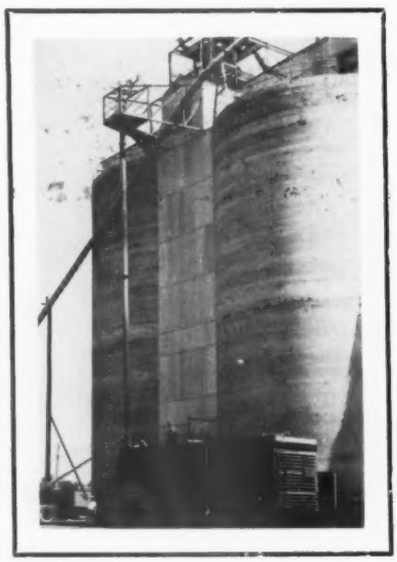
DR. KLAUS W. ROSENFELD (right), holder of three degrees from Technical U. of Darmstadt, Germany, has been named research engineer by DR. DANIEL O. ADAMS, Director of Research, West Virginia Pulp and Paper Co's. Covington, Va., research center.

WILLIAM H. HENCHEY steps in as community relations mgr. of West Virginia Pulp and Paper Co.'s Mechanicville, N. Y. mill. He has his b.s. from Seton Hall U., previously was publicity mgr. for F. W. Dodge Corp. Additional congrats are due Bill: a boy, was added to his family in April, even the score at 2 boys and 2 girls. . . . **E. HORTON GIRDLER** has been promoted to head of product development. He has his b.s. and master's from Rensselaer, has recently been active in development of Mechanicville's merchant program. **PHILIP MADEIROS, JR.,** succeeds Mr. Girdler as general foreman of the semi-chem mill. His b.s. is from New Bedford Textile Institute. **JOHN S. COLTER** takes over as asst. general foreman. . . .

Other promotions at Mechanicville include: **R. JOSEPH KNEELAND,** to work on product development; **RICHARD A. BARTYZEL,** to inventory control of finishing materials in finishing dept.; **MILTON D. TABOR** to supervising unbleached sulfite mill; **WILLIAM R. DELLINGER,** supervising bleachery and bleached pulp storage.

TOIVO K. MAKI has joined Fitchburg Paper Co. as market analyst. He held a similar post at Brown. Co. . . . **JOHN TOWER,** public relations director for International Paper Co. recently motored with his family through the Blue Ridge Mountains on vacation trip to Tennessee. . . . **H. H. MOOMY** has

MATERIALS HANDLING



Constant improvement and refinement in the art of paper manufacturing keeps the industry on a highly competitive basis. Important in the final accounting—if not in the final product—is plant efficiency. An important item in any budget is the handling of chips and other bulk materials, important both in cost of operation and in its efficiency.

Rader's staff of experienced engineers brings you increased efficiency with increased savings, using high pressure pneumatic conveying systems that keep materials moving at peak speeds. Write or phone for information.

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been promoted to general foreman, maintenance dept., Hammermill Paper Co., says supt. **W. R. "BILL" WHITLEY.**

O. E. LOHRKE, JR. is now mgr., merchant sales, Riegel Paper Corp., succeeding **W. J. GARRITY,** now mgr., Carolina Paper sales. **ROBERT O'NEILL,** fills in on New England area. **J. H. S. MacDONALD,** former mgr. of sales of Mersey Paper Co., (now a member of the Bowaters organization), is now a vice president of Bowaters with headquarters in New York. . . .

TOM G. WILLIAMS succeeds the late **FRANK J. FLAIG** as supt., New York and Penn's Lock Haven, Pa., mill. He's a grad of N. Y. State College of Forestry at Syracuse where he majored in pulp and paper, has been with Nypen since, except for 3-year hitch in U.S. Air Force. He lives in Flemington, Pa., with his wife and 2 daughters. . . .

JAMES G. STRONG is now asst. personnel mgr., Tyrone mill of West Virginia P&P; majored in b.a. at American U., Washington, D. C., worked for General Motors specializing in production personnel supervision. . . .

WILLIAM M. THOMPSON, tech service supt., West Va. P&P's Luke, Md., mill is now genl. supt. operations. . . . **PAUL E. BOWMAN,** pulp mill supt. i/c of electrolytic, woodyard and outside depts. as well as pulp mill. . . . Other promotions resulting from Luke mill's $50 million expansion program are: **DONALD M. MELLOR** to gen. field supt. construction program; **SAMUEL W. WIDMER** to project mgr.; **BRUCE DUNN** to staff of project mgr., will specialize in power and electrical studies; **JOHN A. VAZDIKIS,** to chief design engineer; **CHESTER M. "PAT" JENKINS** to chief electrician; and **RALPH W. KALBAUGH** to chief construction accountant. . . .

Bleach Authority Joins Glatfelter

FERRI CASCIANI (left), former research director i/c research laboratories, Hooker Niagara Alkali Co., has joined the top management group of P. H. Glatfelter Co. to coordinate operation and administration of technical service and research and development depts. He is an authority on bleaching and the use of chlorine dioxide.

PAUL J. SCHMITT (right), has been promoted to asst. to the gen. supt. of Glatfelter. He's a grad of Lehigh U., has been with Glatfelter 8 years.

SAVE 1 OR 2 COATS OF PAINT ON YOUR NEW PLANT

Start your new plant with Subox protection and save from the very beginning.

As the only American paints made with lead-suboxide, Subox paints provide extraordinary anti-corrosion protection. Lead-suboxide is *chemically active:* Actually works to prevent corrosion.

Two coats of Subox paint generally will give the protection of three coats of standard paint and frequently but one coat is sufficient. Even under severe conditions, Subox paints do not crack, chip or blister.

Eventual repainting costs are minimized because lead-suboxide establishes a dense, metallic lead film which can be recoated without expensive surface preparation.

Available in many attractive modern colors. Write for brochure: *"Plan Painting of New Plants to Reduce Costs".*

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Subox Inc.

Established 1924
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PULP & PAPER

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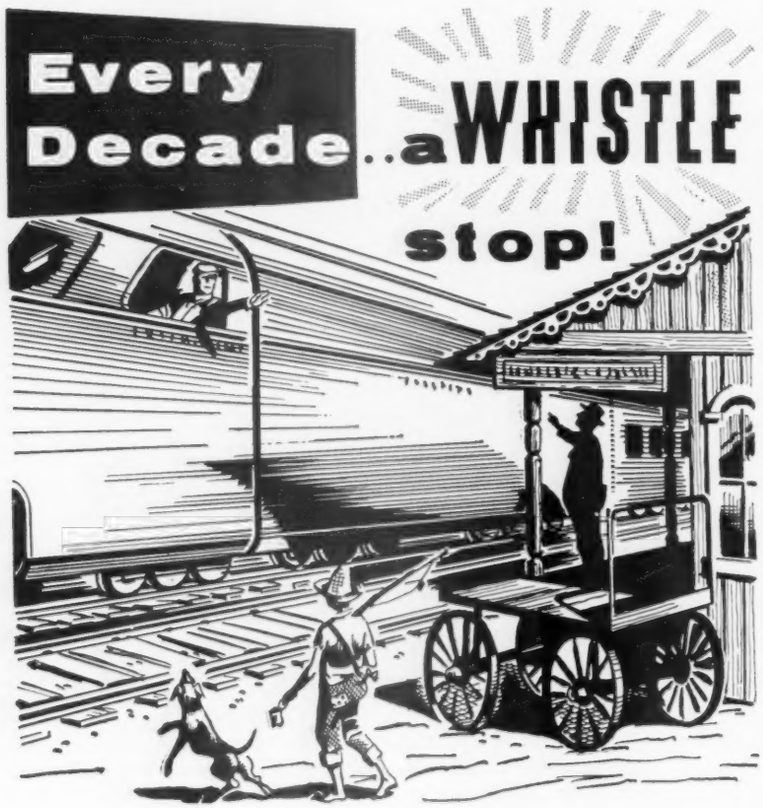
Southern Sidelights

ERLING RIIS, vice pres. of International Paper Co. and gen. mgr. of its Southern Kraft div., announces these promotions: **HOWARD D. HINMAN** becomes mgr. of the company's new mill at Pine Bluff, Ark. **J. FRANK MIXSON**, mgr. of the Springhill, La., mill, replaces Mr. Hinman as mgr. of the Georgetown, S. C., mill. **F. S. McMILLAN**, asst. mgr. at the Springhill mill, becomes mgr. at that mill. . . .

W. B. HOBBS was named mill mgr. at Owens Illinois Glass Co.'s Jacksonville, Fla., mill. . . . **R. W. WALKER** will be office mgr. of Time Inc.-Crown Z's new mill at St. Francisville, La. He was asst. office mgr. at West Linn Ore., for CZ. . . . **FRED MORGAN** succeeds **W. H. GRAHAM** as plant mgr. of Johns-Manville's Natchez, Miss., mill. Mr. Graham has gone west to manage a new J-M plant at Klamath Falls, Ore. Mr. Morgan was supt. of production, finishing and scheduling at Natchez. . . .

Promotions at Champion
KARL R. BENDETSEN (left), vice pres. and Texas Div. gen. mgr., Champion Paper and Fibre Co., Pasadena, Tex., announces appointment of STEPHEN CHASE, JR. (right) as asst. gen. mgr. R. L. BETTS, former asst. production mgr., succeeds Mr. Chase as production mgr. JOHN O. PARROTT becomes asst. production mgr. for operations and ODELL SANDERS, chief of process control staff. Mr. Chase, a graduate of Dartmouth, has been with Champion 27 years. Mr. Bendetsen, raised and educated in Washington State, was serving in a high government post in Washington, D.C., when he himself was appointed asst. mgr. at Pasadena several years ago.



The older we grow, the faster the months, years, decades whisk by. We at Lindsay endeavor to catch flying time long enough to expand and improve our facilities year after year. No expenditure lacks for exhaustive consideration if it promises to enhance the quality of Lindsay Fourdrinier wires and hence the quality of America's paper.

THE LINDSAY WIRE WEAVING COMPANY
Cleveland 10, Ohio

LINDSAY WIRES Since 1904

FOR PAPER MANUFACTURING

GRAHAM as plant mgr. of Johns-Manville's Natchez, Miss., mill. Mr. Graham has gone west to manage a new J-M plant at Klamath Falls, Ore. Mr. Morgan was supt. of production, finishing and scheduling at Natchez. . . .

Tenn., has left the industry after 18 years mgr. at Bowaters Southern, Calhoun, Tenn., has left the industry after 18 years to become director of public relations with Carter Carburetor Co., St. Louis, Mo. George joined Bowaters in 1952, was formerly personnel director of Coosa River Newsprint Co. **JOHN T. SKIPPER**, asst. ind. relations mgr. at Bowaters and graduate of U. of Alabama, took Mr. Koons' place. . . .

G. STERLING BAILEY, former chemist with Rayonier Inc., is now on the staff of North Carolina Pulp Co. at Plymouth, N. C. . . . **MISS ELIZABETH S. GRAY**, assistant secretary since 1938 and acting secretary of the Chesapeake Corp. of Virginia since 1953, was named secretary. Miss Gray is a native of Lawrenceville, Va., attended Westhampton and Sweet Briar Colleges. . . .

Mr. and Mrs. **K. B. DORNBERGER** were married January 30, 1957, at the home of Rev. Joe Wells in Pasadena, Texas. Mrs. Dornberger is the former Mrs. Louise Hodges. Karl is a pulp mill shift supt. and a 20-year employe at Champion Paper & Fibre Co. The couple will reside at 3376 Ozark in Houston, Tex. . . . **J. C. THEILER**, div. project engineer, becomes asst. mill mgr. at Owens-Illinois Glass Co., Big Island, Va., mill. . . .

MELVIN J. FARRIS, pulp mill supt. of Owens-Illinois Glass Co., Valdosta Mill Division, died Mar. 23, 1957, after a brief illness. Born in Hornbeck, La. in

1907, he started in 1925 with Brown Paper Mills in Monroe, La., later was pulp mill tour foreman at Container Corp. of America's Fernandina, Fla., mill, pulp mill supt. of Southland Paper mill, Lufkin, Tex. and pulp mill supt. at National Container Corp., Jacksonville, Fla. . . .

GLENN RALSTON becomes gen. supt., Owens-Illinois Glass Co., Valdosta Mill Div. . . .

Pennsylvania Industrial Chemical Corp. has named **BERNARD J. DAVIS** district manager with headquarters in a new office at 2640 Canal St., New Orleans, La. Mr. Davis was with American Cyanamid Co. and Shell Oil Co. He is a graduate of Temple U. and has done post-grad work at Pennsylvania and Maryland. . . . **J. H. SYMES**, chief chemist at Big Island, Va., becomes asst. pulp mill supt. at Owens Illinois Glass Co. Valdosta Mill Div. . . . **C. HEIDEMANN** is transferring from Owens-Illinois Glass Co.'s Tomahawk, Wis., mill to become asst. to paper mill supt. at Big Island, Va. . . .

Chief chemist for the new mill being built by Container Corp. of America at Brewton, Ala., is **NORMAN M. Le MAISTRE.** He was on technical staff at Gulf States Paper Corp. in Tuscaloosa. . . . **JOHN L. AITKENS**, of Rayonier's engineering staff, has been transferred from Grays Harbor, Wash., division to Jesup, Ga. . . . **RICHARD CONVEY**, sales engineer for John W. Bolton & Sons, Lawrence, Mass., has been transferred to Jacksonville, Fla., as field rep. . . . **LOUIS A. KLEIN**, formerly with Gulf States Paper Corp., is now in Birmingham, Ala., for Rust Engineering. . . . **SAM ROLLINSON** is now technical director of the St. Mary's (Ga.) Kraft Corp.

Just a moment to say hello in a Southern airport—**BILL ADAMS**, pres., St. Regis, on one of his frequent trips to the in the South . . .

Bill Brydges Dies

William H. Brydges, former vice pres. and gen. mgr. of the Big Island, Va., mill when it was Bedford Pulp & Paper Co. and later National Container, died May 6 at his home in Lynchburg, Va.

Mr. Brydges was a past president and trustee of American P&P Mill Supts. Assn. and was chairman of two of its divisions—Northern N.Y. and Southeastern.

His daughter is Mrs. Harry Straus, Jr., wife of the son of Ecusta Paper Corp.'s late founder and president.

Pacific Patter

Lucky for those 50 to 60 lb. Alaska king salmon while **SVARRE HAZELQUIST**, general supt., Ketchikan Pulp

2-5 HEATER
2-6 EAST HEATER HI LEVEL
2-6 BEST HEATER HI LEVEL
2-7 EAST HEATER HI LEVEL
EAST-HTR FD PUMP BEARING OIL LO PRESSURE
CENT-BLR FD PUMP BEARING OIL LO PRESSURE
CENT-BLR FD PUMP HYDR COUPLING LO OIL PRESSURE
BEST-HTR FD PUMP BEARING OIL LO PRESSURE

Panalarm Annunciator pinpoints process "off-normals"

In the process industries and among users of automatic machinery, trouble is minimized when it's caught early. That's the purpose of the Panalarm Annunciator System—a continuous monitor of your process.

One typical adaptation of the modular Panalarm system is engineered to differentiate between the first "off-normal" and subsequent "off-normals" caused by the first. This feature allows instantaneous recognition of the prime source of trouble in a "chain reaction."

Another adaptation is designed specifically for motor start-up and shutdown. It has also been successfully adapted for supervisory control, pump control and programming.

Your Panalarm sales engineer will be happy to make a survey of your requirements to determine whether a Panalarm system can aid productivity and safety in your process. For electrical and mechanical data on standard systems, request Catalog 100B on your letterhead.

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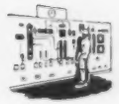
Graphic Panels, Control Centers

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Strictly Personal

Co., had his wrist in a cast. Fractured it when he climbed on a chair to get his fishing gear down—just after a floor waxing job . . . **THOMAS NOEL BLAND**, who retired last year as president of Fibreboard Paper Products Corp., was appointed public utilities manager for City and County of San Francisco. Utilities include the airport, municipal railway, and water department. "Now," said the mayor to Mr. Bland, "you can give up the idea of playing any more golf" . . .

NILS O. GALTELAND ("Nog" to many friends) and his wife, Marion, report a daughter, Anne Julie, born Apr. 9 at their home, 5211 Electric Ave., La Jolla, Calif. Former engineer at St. Regis' Tacoma, Wash., mill and in instrument supply business, he has been an industry consultant lately . . . **C. H. KREIENBAUM**, vice chairman of Simpson Timber Co., announces formation of a central research dept. to work on forestry, marketing and chemical research in pulp and paper. **WILLIAM A. McKENZIE**, of Simpson Paper Co., Everett, Wash., was named chief engineer of Simpson Timber Co. and will serve under Mr. Kreienbaum in the new department. . . .

SID MOORE, chief engineer of Ray Smythe Co., Portland, Ore., recently made a transcontinental tour, spending a week at Heppenstall Co. plants at Pittsburgh and New Brighton, Pa. studying manufacturing processes . . .

Personnel changes in upper level of CZ Central Research Dept., Camas, announced by **DR. W. W. MOYER**, research director: **DR. WALTER G. MEYER**, manager of process development, promoted to asst. director of research; **DR. J. D. WETHERN**, manager of paper research, becomes coordinator of applied research, a new CRD position; **DR. K. G. BOOTH**, manager of fiber research, resigned to become research manager of Abitibi Power & Paper Co., Ltd., Sault Ste. Marie, Ont. . . . **CECIL L. DILLING** has been promoted to asst. gen. manager of Western-Waxide Specialty Packaging Div. and **BERRY L. DILLON** replaces him as res. manager at San Leandro plant . . .

ROBERT NOBLE, moving from Tacoma, Wash., to be works manager of Hooker Chemicals Ltd.'s new plant at Vancouver, B.C., is building a home at British Properties, a suburb, and will be moved in when the plant starts up this summer. **JACK SUTHERLAND** is sales manager for the Canadian subsidiary. . . . **AL QUINN**, president of Stebbins Engineering, Seattle, **LLOYD PUBLICOVER**, also from Stebbins, Seattle, and **HOWARD DUGGAN** and **BEAUMONT THOMAS**, both from the Watertown company, made a sizeable Stebbins delegation at the recent West Canadian meeting in Harrison Hot Springs. . . .

W. H. GRAHAM, plant mgr. of Johns-Manville Corp.'s Natchez, Miss., plant was appointed plant mgr. of the firm's new Klamath Falls, Ore. insulating board plant . . . **ALBERT C. HENTSCHEL**, veteran of Johnson, Carvell & Murphy, Los Angeles, retired as vice pres. and paper sales mgr. after 39 years with the firm . . . **J. E. CONNELL**, sales mgr. of West Coast div., Nopco Chemical Co., Richmond, Cal., announces **F. R. GAGNIER** and **D. E. MURPHY** will work out of Nopco's new Los Angeles sales office at 4858 Valley Blvd. . . . **F. C. GARDNER**, pres. of Ebasco Services Inc., announces that Ebasco has opened a San Francisco office at 120 Montgomery St. **HARVEY K. BRECKENRIDGE** is manager . . . **G. J. TICOULAT**, Crown Zellerbach senior vice pres., was elected a director. . . .

HERBERT FLEISHHACKER, SR., noted Bay Area philanthropist-financier

For Anything You Need in Woodwaste Utilization Equipment

call on

SODERHAMN

Our enlarged Talladega plant is tooled up and ready to supply your mill with every type of modern, field proved woodwaste utilization equipment and sawmill machinery. We can also furnish complete installation service on any type of equipment that we make.

CHECK THIS LIST . . .

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- ☐ **CAMBIO BARKERS.** Completely automatic. Barks logs down to 4 feet in length at speeds up to 150 feet a minute. No air required. Four sizes.
- ☐ **SODERHAMN D-3 BARKERS.** These low-cost barkers have maximum feed speed of 40 linear feet per minute. Handle 8 foot lengths and up.
- ☐ **NEW D-4 SLAB BARKER.** Barks automatically slabs and edgings up to 16" wide. Proven flail head design, using 20 to 30 HP for barking head and feed work. Price with one barking head $3,950, excluding motors.
- ☐ **HF-60, HF-30 SLAB CHIPPERS AND STANDARD SPOUT CHIPPERS.** Handle simultaneously round logs, slabs, edgings, cutoffs, box factory, veneer waste.
- ☐ **"METAL-MATIC" METAL DETECTOR.** Detects any metal in or on logs and sounds alarm by horn and dye-marks the log.
- ☐ **SODERHAMN CHIP SCREENS.** Two models — CS-90C or CS-35. New horizontal rotating type with double sawdust elimination; separate outlets for chips, sawdust and splinters.
- ☐ **SODERHAMN DIXIE GANG SAWS.** First in efficiency, economy, dependability and durability.
- ☐ **CARY-LIFT LOADERS.** Four basic models available. Designed and built especially for the logging, lumbering and pulpwood industries.
- ☐ **CONVEYORS AND DOUBLE LOG FLIPPERS.** Ruggedly constructed for needs of forest industry and paper mills.
- ☐ Many other machines for the woodworking industry, all backed by the 92 years' experience of our parent company — THE SODERHAMNS VERKSTADER AB, Soderhamn, Sweden.

All built to American Standards. Direct Factory Service and Engineering. Call, wire or write for complete information on any of the above.

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Canadian Representatives: East Coast—Forano Limited, Montreal, Canada

and a Crown Z director since 1928, died recently of heart attack in San Francisco at age 84. His association with CZ dates back to his interest in Floriston Pulp & Paper Co. . . .

E. W. CAREY, Indianapolis executive management coordinator, named vice president of Fibreboard Paper Products Corp. . . . **GEORGE J. PECARO** advanced from general vice president to executive vice president of Flintkote Co. . . . **Dr. J. S. BARTON,** director of packaging research and development at CZ's Western-Waxide laboratories announced staff additions to the San Leandro lab as follows: **C. S. FUNK** promoted from quality coordinator of W-W to supervisor of production services, **E. V. HARDMAN,** W-W senior chemist, to supervisor of applied packaging division, **Dr. JAMES E. SMITH,** former research chemist at CRD Camas, to supervisor of packaging material research, **R. A. TEDESCO,** of Camas division technical staff, becomes associate chemist of production services group . . . **ROLAND SUNDSTROM,** from San Francisco, is new tech. asst. to paper mill supt., Camas, Crown Z . . .

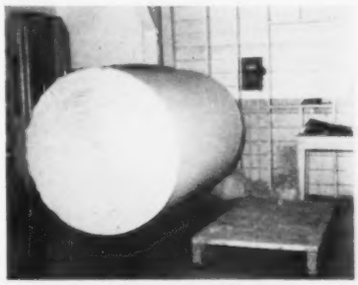
P. R. GOULET, promoted from senior engineer to process engineer-paper machines and finishing at CZ Camas . . . **DONALD A. NADIG,** assistant to steam and power supt., CZ Port Townsend, advanced to assistant bag supt. . . . **A. W. SUMARES,** product research and development, Western-Waxide San Leandro, transfers to W-W Los Angeles as assistant tech. supt. . . . **ALLEN K. HALLER,** tech. asst. to paper mill supt. at CZ West Linn, transfers to Crown's Lebanon plant as Orzan production foreman . . . **WILLIAM G. REED,** board chairman of Simpson Logging Co., is elected a director of Stanford Research Institute . . .

Canadian Comment

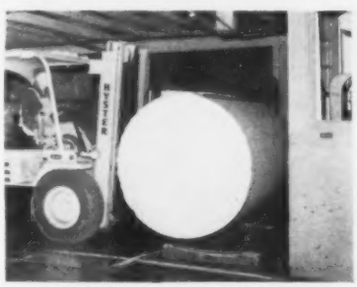
A. E. PENNEY, formerly of Brown Corp., LaTuque, Que. (now owned by Canadian International) moved to the Pacific coast several months ago to become director of pulp production for Columbia Cellulose Co. This spring a cousin, **GERRY PENNEY,** former mill manager of Bowaters Newfoundland Pulp & Paper mills, moved to Vancouver, too, as a member of the Sandwell organization. The two Penneys met again at the recent technical meeting at Harrison Hot Springs, thousands of miles from their former homes . . . **LEON KOERNER,** who went to British Columbia from Prague in 1938 to establish the Alaska Pine organization, subsequently sold to Rayonier Inc., recently presented the University of B.C. with a gift of $500,000 to further research. This makes $1,500,000 in gifts to cultural institutions during the past two years by the former Czechoslovak forester and lumber executive.

FAYLAND LADD, former training or-

HERE'S HOW CROWN ZELLERBACH LOADS 22 PAPER ROLLS (4000 lbs. ea.) IN 2 HRS. WITH HYSTER ROLL-GRAB



Picking up roll off skid.



Weighing, recording, stenciling.

Rotating roll to vertical while transporting.

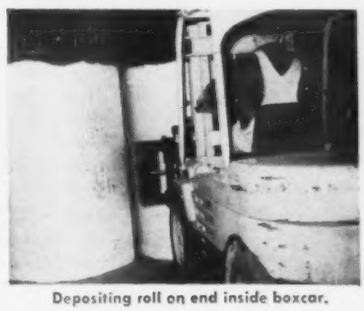
LEBANON, ORE.—Using a rotating Roll-Grab attachment on a Hyster 6000-lb. Lift Truck, this Crown Zellerbach plant is now loading 22 giant 4000-lb. rolls (53" dia., 73" long) into a double-door boxcar in approximately 2 hours.

After picking up the roll and weighing (in a horizontal position) the Roll-Grab rotates the roll to a vertical position as the lift truck carries it into the boxcar, and deposits the rolls on end, two abreast.

Hydraulic power from the lift truck rotates the Roll-Grab and provides the clamping pressure which holds the paper roll safely in any position. The Hyster Lift Truck, mounted on pneumatic tires, easily and safely transports the heaviest rolls (up to 60" dia.) across wooden floors and steel plate decking into rail cars and truck vans. Company engineers state this method has materially speeded the loading cycle.

Your Hyster Dealer makes it his business to keep up with the materials handling progress in pulp and paper mills. Call him today. He will help you reduce your handling costs (perhaps as much as 80%) . . . and these savings go directly into *your* profits!

Entering boxcar.



Depositing roll on end inside boxcar.

Call your Hyster Dealer today. He is listed in your telephone directory under "Trucks-Industrial".

HYSTER COMPANY

HYSTER

Hyster Industrial Trucks Increase Profits for Pulp and Paper Mills

2902-72 N. E. Clackamas.....Portland 8, Oregon
1010-72 Myers Street.....Danville, Illinois
Hyster N.V. .....Nijmegen, The Netherlands
FACTORIES: Portland, Oregon; Danville, Illinois; Peoria, Illinois; Nijmegen, The Netherlands

Photographer Bernard Hoffman found even the free flow of CO_2 from a cake of dry ice is difficult to control.

Controlling Flow in Fluid Engineering

To tame and control flow accurately, you must relate it to pressure, volume, turbulence and other variables. That's when you can look to the engineering leadership of S. Morgan Smith.

Butterfly valves are a good example. For the majority of processing situations, a wide range of standard R-S Butterfly Valves are assembled from stock for fast shipment. But for special fluid control problems, one or more can be applied to solve your needs. Standard or special, all R-S Butterfly Valves give you uniform flow control through all positions in the normal regulating range. You get minimum turbulence and pressure drop, save on pumping power because of simplified design and streamlined vanes. Compact and light in weight, they give you quick regulation and tight closure.

To learn more about the complete SMS line of Rotovalves, Ball and Butterfly Valves, call on our nearest representative. For information on special engineering, write S. Morgan Smith Co., York, Pa.

S. MORGAN SMITH — HYDRODYNAMICS

AFFILIATE: S. MORGAN SMITH, CANADA, LIMITED, TORONTO

Rotovalves • Ball Valves • R-S Butterfly Valves • Free-Discharge Valves • Liquid Heaters • Pumps • Hydraulic Turbines & Accessories

ganizer and groundwood supt. at Consolidated Paper Corp's Laurentide division, has been named director of training for manufacturing department of the company, with headquarters at Grand' Mere . . . **J. B. SWEENEY** has been appointed acting division maanger of the Port Alfred division, Consolidated Paper Corp., replacing retired **F. L. LOGAN** . . . **GEORGE C. BICKNELL,** formerly of Canadian Car & Foundry Co., has joined Great Lakes Paper Co. as manager of industrial relations . . . **MURDO MacKAY,** personnel supt. of Great Lakes, has been promoted to assistant mgr. of industrial relations . . .

W. P. NESBITT, production manager for Howard Smith Paper Mills, has been made responsible for all company manufacturing operations . . . **C. L. TOMLINSON** now takes over as gen. supt. of the Cornwall division . . . **PAUL M. MARSHALL** has been appointed secretary of Canadian Chemical & Cellulose Co. at Montreal, affiliated with Columbia Cellulose Co. . . . **H. K. MORRIS** is the new manager of purchases and stores for Consolidated Paper Corp. . . . **E. A. AGAR** has been named office manager of the Fort Frances, Ont., mill of Minnesota & Ontario Paper Co. . . . **W. A. YOUNG,** former industrial relations mgr. at Johns-Manville Corp.'s Toronto, Ont. plant, is plant mgr. at J-M's new North Bay, Ont.

D. A. BREWSTER, former assistant to gen. mgr. pulp and paper, MacMillan & Bloedel, has been appointed assistant to the president, pulp and paper, following the start of production of kraft paper at Alberni division. **H. A. KELLEY,** who has been machine room supt., becomes assistant mgr. of the division in charge of the groundwood mill, paper mill, finishing, warehouse and shipping. **J. K. EADIE** continues as assistant mgr. in charge of wood supply, kraft mill, engineering, maintenance, steam conversion and power.

Elected by Canadians

Guiding Technical Section, Western Branch, CPPA, next year will be: DR. MORRIS WAYMAN (left), Columbia Cellulose Co., chairman, and DR. JOHN KEAYS, Powell River Co., first vice chairman.

Former National Container Execs Now Base at Toledo, O.

Since merger of National Container Corp. into Owens-Illinois Glass Co., direction of the company is headed up in Toledo, O., and several former key men in NCC are moving or have moved there.

C. G. McLaren, now vice pres. and gen. mgr., mills and woodlands for Owens-Illinois Mill Division, and F. B. Schelhorn, vice pres.-mfg., Mill Division, are two top men being based in Toledo, going there from Jacksonville.

George W. Abel, formerly of St. Regis Woodlands Division, Jacksonville, has been named technical director of forestry for Owens-Illinois, with headquarters in Toledo.

Joining Toledo purchasing dept., is Ralph Wood, former general purchasing agent, Southern Mills of National.

D. J. Brett, Jr., from industrial relations mgr. in Jax, is transferred to Toledo as Mill Division personnel manager. A. K. Van Tine and J. C. Keegan become Owens-Illinois staff assistants in personnel.

Doug Hotch goes to Toledo comptroller's dept., from Valdosta, Ga., where he was asst. mill mgr.

Meet Huyck's
MOE

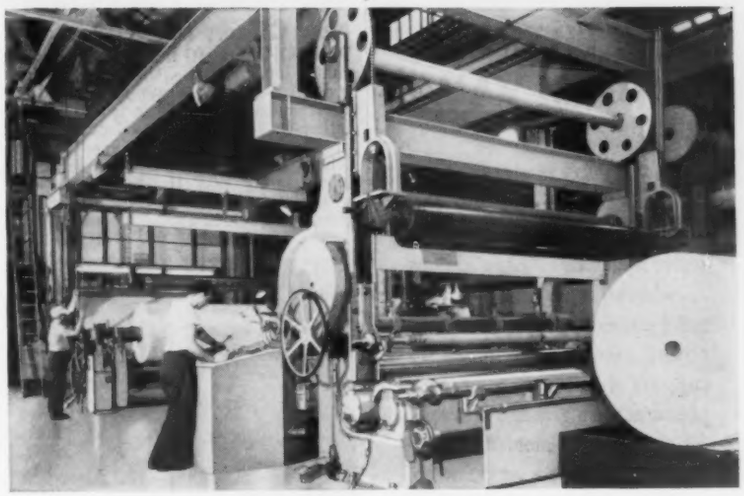
Bill Moe, Huyck's General Superintendent, joined the company 29 years ago following his graduation from Leeds University in England. A recognized authority on all phases of feltmaking, he takes pride in bringing you all the advantages of Huyck's well coordinated field, design and manufacturing staffs.

HUYCK FELTS

First in Quality . . . First in Service Since 1870

Why The Manager Of Engineering In This Plant Selected

TRUSCON COATINGS



FLOORS, MACHINES, WALLS AND CEILINGS AND EXTERIOR OF THIS PLANT ARE TRUSCON PROTECTED . . . EACH BY A SPECIALIZED COATING DESIGNED TO PROVIDE MAXIMUM WEAR AND PROTECTION

By following the Truscon consultants' recommendations, the Purchasing Agent and Plant Engineer in this plant know that each piece of property and equipment receives the best protection that modern paint chemistry can offer.

Because of Truscon Laboratories' nearly 50 years experience and reputation in the field of specialized maintenance coatings, you, too, can rely on:

TOP QUALITY . . . Finest ingredients and best techniques of formulating characterize all Truscon products.

DEPENDABLE PERFORMANCE . . . All Truscon products undergo exhaustive field testing for wear, weathering, color retention and coverage, before they are placed on the market.

GOOD SERVICE AND FAST DELIVERY . . . A Truscon factory branch in your area assures complete inventories and trained personnel—immediate delivery and service are available to you at all times.

FREE CONSULTATION . . . Truscon consultants are factory trained in the proper selection of specialized coatings for all conditions—alkaline, acid, rust, moisture, etc., and are at your disposal at all times for consultation with your own staff.

Call your Truscon representative today for an "on the spot" demonstration of Truscon products under your exposure conditions.

TRUSCON
Industrial Maintenance Division of
Devoe & Raynolds Co., Inc.
Laboratories
Detroit 11, Michigan

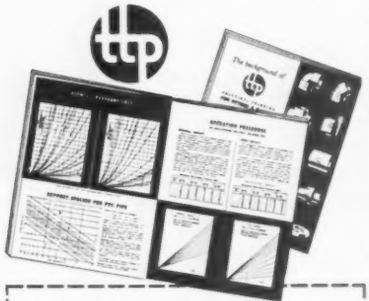
FACTS ABOUT PVC

PIPE FITTINGS, FLANGES, VALVES

NEW BOOKLETS give complete information on polyvinyl chloride piping for handling corrosive materials . . . applications . . . advantages . . . chemical resistance properties . . . physical properties . . . flow vs. pressure loss . . . support spacing . . . operating pressures. Also give specifications for **ttp** injection-molded fittings, flanges and valves . . . and how to cut and thread or solvent cement PVC piping.

Mail coupon today for Bulletins 119 and 122.

TUBE TURNS PLASTICS, INC.
Louisville 11, Kentucky
Call your TUBE TURNS PLASTICS' Distributor



TUBE TURNS PLASTICS, INC.
Dept. PA-6, 2929 Magazine Street
Louisville 11, Kentucky
Please send Bulletins 119 and 122 on PVC piping and **ttp** products.

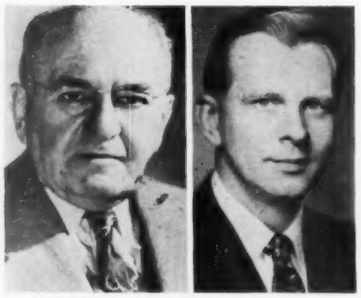
Company Name _____

Company Address _____

City _____ *Zone* ____ *State* _____

Your Name _____

Position _____



New Officers in Far West

P. N. ENGEL (left) becomes chairman of Infilco Inc. and J. S. GUSTAFSON (right) president. For 55 years Mr. Engel has been president of the firm founded by his father in 1896. Mr. Gustafson, graduate of Northwestern Univ., joined Touche, Nivan, Bailey and Smart after serving in Navy during WW II. He became treas. of Infilco in 1951, vice pres. a year later, exec. vice pres. in 1953.

In New Posts

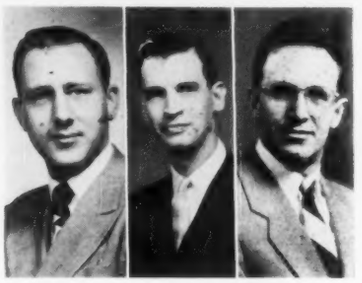
GORHAM H. SCOTT (left), has been promoted to asst. to president WILLIAM H. CHISHOLM, Oxford Paper Co. He has been vice pres. and treasurer of Oxford's subsidiary Rumford Falls Power Co., will move to offices in New York City.

FRED G. FERRAZZANO (right), is northern California sales representative for National Aniline div., Allied Chemical & Dye Corp., it was announced by HARRIS B. FENN. Mr. Ferrazzano will work out of San Francisco headquarters.

Appointments by Olin

W. ADRIAN KING (left), is appointed gen. sales mgr. of industrial chemicals div., Olin Mathieson Chemical Corp., Baltimore, Md., announces JOHN O. LOGAN, div. vice pres. and gen. mgr. JOHN F. SYNAN (center), and WALTER W. NORTHGRAVES (right), are appointed to the division's market development dept., and will specialize in the pulp and paper industry. Mr. Synan has worked on development of bleaching agents. Mr. Northgraves was responsible for technical service to the industry.

PULP & PAPER — PICTURES OF PEOPLE IN THE NEWS



Introduce New Coatings

Three key men, (left to right) JOHN PLATNER, E. W. SCOTT and J. P. TALLEY, have been promoted to new posts by Chemical Division, Goodyear Tire and Rubber Co., according to C. O. McNeer, division gen. sales mgr.

Mr. Platner is new assistant mgr. of coatings department, replacing G. H. Campbell, recently transferred to the Goodyear International Corp. Mr. Scott, former sales service rep. for specialty coatings, is new mgr. of sales development. This newly created unit has been formed to expedite introduction of new coating materials for paper, etc.

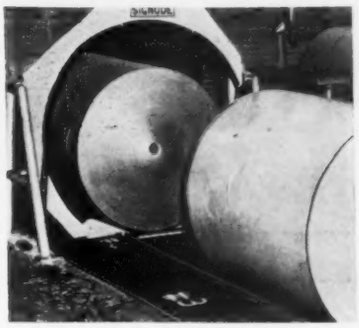
Mr. Talley, former development engineer in Chemical Division laboratories, takes over sales service post held by Mr. Platner.

Albany Felt Appointments

Albany Felt Co. announces these appointments (left to right): LARRY BROWN, service engineer, and FRANK McGRATH and ROBERT GORDON, sales engineers. Mr. Brown, graduate of New York State College of Forestry, 1948, in pulp and paper manufacturing, joined the Kalamazoo, Mich., plant of St. Regis Paper Co. as assistant chief chemist, supervising trial paper runs on paper machines. Since joining Albany, he has undergone an intensive training program. He will be headquartered in Albany, N. Y. Mr. McGrath's new territory includes Tenn., Va. and N. C. He holds a bachelor's degree from Williamsport College and master's from Rensselaer Polytechnic Institute, 1941, both in industrial engineering. He joined Albany in 1953. Mr. Gordon's new territory includes Ill. and Ind. He holds a bachelor's degree in mechanical engineering from Newark College of Engineering, 1950. With U. S. Gypsum, he was process engineer and later, with National Gypsum, was quality supervisor and maintenance supervisor. He joined Albany last year.

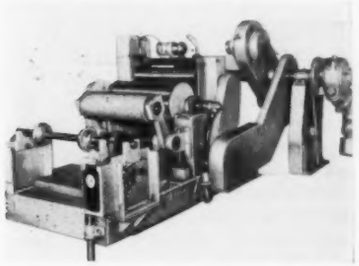
PULP & PAPER New Equipment and Supplies

Roll-End Binder



Automatic strapping for large paper roll ends is provided in the Signode Model M20-RB roll-end binding machine. Capacity is upwards of 70 rolls per hour with roll diameters 32 to 60-in.; any width can be handled, says Signode Steel Strapping Co., Chicago.

Polyethylene Laminator



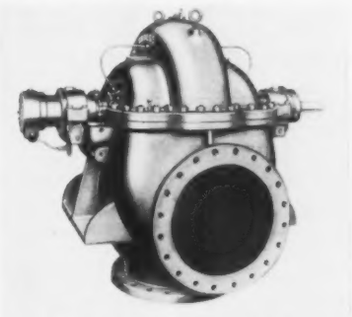
This new extrusion laminator has been designed by Dilts Division of Black-Clawson Co. to fill need for a high speed pilot plant and commercial unit in web widths from 24-in. to 48-in. Features: Model UAL unwind stand with air operated tension control and Model PL-450 polyethylene laminator. Jack-mounted base allows altering of space between rubber covered roll and steel cooling roll of laminator. Die on extruder can be altered through central jacking point.

Drying, Baling Pulp System

The Bauer-Bale pulp system has economic and production advantages that improve on present pulp marketing methods, says The Bauer Bros. Co., Springfield, O.

Process: pulp dewatered by a vacuum decker; reduced to 40%-50% solids in screw or roll press; fluffed in a Bauer single or double disc mill; air borne to a three-pass revolving pulp dryer where 75% to 95% water is removed; dried pulp moves by air to high density baling press.

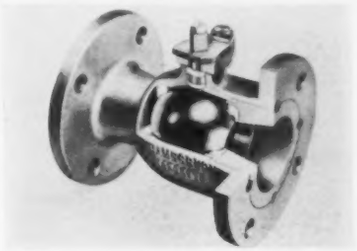
High Capacity Pumps



For capacities up to 25,000 gpm, Goulds Pumps, Inc. of Seneca Falls, New York, has introduced Fig. 3420-3423–24 in. pumps. Both units are the same except for the lower half casing. Fig. 3420 has horizontal suction and discharge, while Fig. 3423 has vertical bottom suction and horizontal discharge.

These single stage, double suction pumps have horizontally split casings with upper and lower half bolted and dowelled together. Removal of the upper half casing permits inspection, maintenance and removal of entire rotating element without disturbing suction and discharge piping or pump and driver alignment. Write to Goulds Pumps, Inc., 33 Black Brook Rd., Seneca Falls, N.Y.

Unusual Design Valves



The 3 in. and 4 in. "Double Seal" ball valves now marketed by Jamesbury Corp. 45 New St., Worcester, Mass., are said to offer unique design advantages, along with other products in its ball valve line: Jamesbury engineers say they have eliminated high turbulence and leakage tendencies. The 3 in. and 4 in. valves have eliminated the valve bonnet. Unit-body construction design is said to assure no joint leakage points.

Greater Production of Higher Quality Pulp

- *in Less Time*
- *at Lower Cost*

This is the end result of the various processes and equipment which we have installed in pulp mills throughout North America. Send us details of your requirements.

Chemipulp Process Inc.

Woolworth Bldg. Watertown, N. Y.

●

Associated with

Chemipulp Process Ltd., 253 Ontario St., Kingston, Ont.

●

West Coast

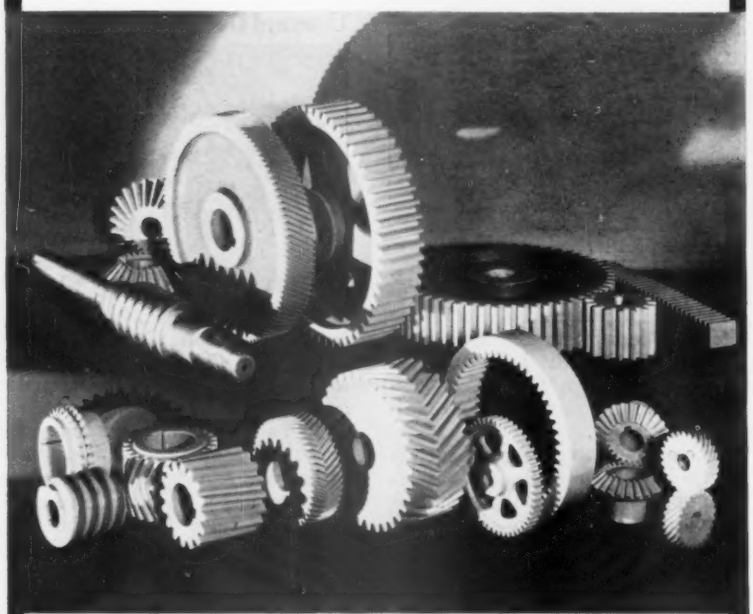
A. H. Lundberg
Orpheum Bldg., Seattle

Lundberg-Ahlen Equipment Ltd.
146 E. Broadway, Vancouver

One of these 9

H&S Gears

is sure to answer your power transmission needs!



Spur • Racks • Bevel • Mitre • Internal • Worm • Helical • Spiral • Herringbone

Regardless of type, every H & S Gear is of the rugged, "husky" type. Heavy rims are well reinforced. Hubs are heavy in section, eliminating the need for key patches. All sharp corners are broken and generous fillets are provided.

H & S Gears are available of Steel, Hardened Steel, Alloys, Cast Iron, Bronze, Rawhide, Fibroil, or Bakelite.

Exacting care is exercised in every manufacturing step of H & S Gears. This insures *quietness of operation, uniform velocity ratio,* and *freedom from vibration.*

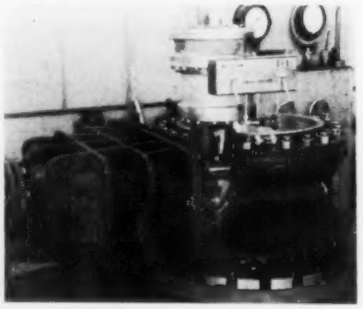
Whether you need a gear that weighs one ounce or 10 tons, why not put our years of gear engineering experience to work for you. Just send us the specifications or call. There's no obligation.

THE HORSBURGH & SCOTT CO.
GEARS AND SPEED REDUCERS
5112 Hamilton Avenue
Cleveland 14, Ohio

Send note on Company Letterhead for complete H & S Catalog

PULP & PAPER Equipment & Supplies

Digester Cover from Sweden



A. B. Nordiska Armaturfabrikerna, Linkoping, Sweden, manufactures a new NAF automatic digester top cover. For a number of years, water-hydraulically operated NAF top covers have been used in Scandinavia and other foreign countries. The cover is automatically raised, lowered and turned, and can be supplied in cast or stainless steel AISI 316 construction. Write to: Papermaking Equipment Co., Englewood, N.J.

Titanium Valve

Said to be the nation's first fabricated valve of titanium, Fabri-Valve Co. of America, 6-in. DiFab wedge-gate valve is 24-in. high, weighs 60 lbs. Its toughness, lightweight and corrosion-resistant qualities will reduce maintenance costs says Fabri-Valve. Estimated resistance to corrosion in salt water is good for 1,000 years, says the company.

New Speed Transmitter

A departure from conventional speed transmitting devices, the new Type 16A Pneumatic Speed Transmitter designed by Foxboro Co., Foxboro, Mass., produces a pneumatic output linearly proportional to rotational speed. It will measure the speed of any rotating machinery and is particularly applicable to turbines, conveyer lines, compressors and mill equipment.

The transmitter operates on the force balance principle with magnetic

actuation of a standard pneumatic circuit. Connected to rotating equipment, the transmitter input shaft spins a multipole permanent magnet, rotating a magnetic field through a non-magnetic disc close to the magnet poles. The disc, with a force bar attached, tends to rotate in the same direction as the magnet, positioning the bar in relation to an air nozzle. The transmitter is small, light and easily installed.

Spring-Loaded Valve

Atlas Valve Co., 280 South St., Newark 5, N.J., has this spring-loaded relief and back pressure valve designed for both condensing and non-condensing systems. Valve #1605 comes in sizes 2½-in. to 6-in., with adjustments ranging from 5 to 35 psi.

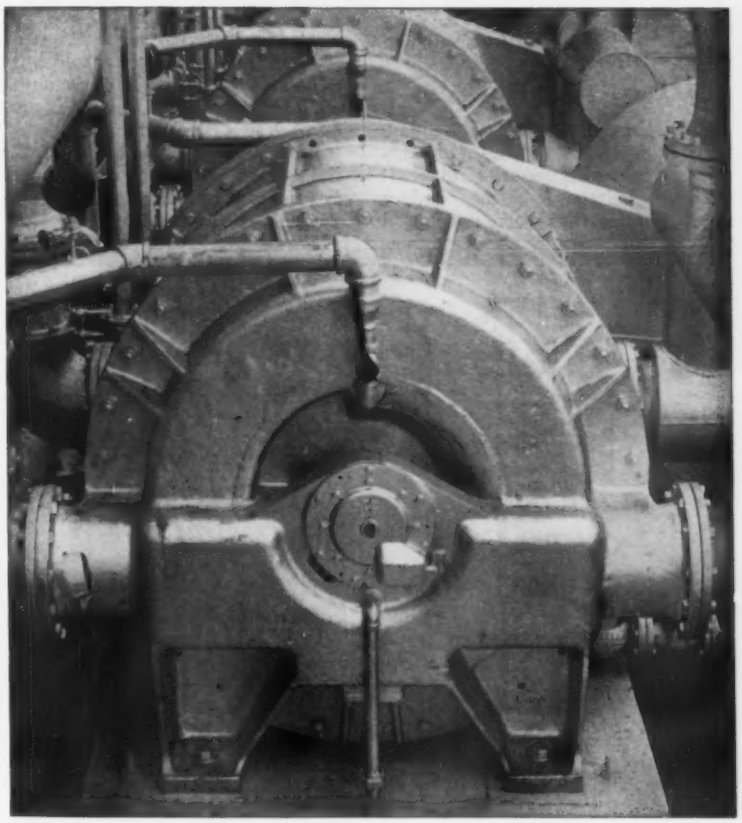
Speed Reducer

Straitline is the name for a new in-line series of speed reducers by Western Gear Corp. Available in double and triple reduction they feature complete interchangeability of individual parts throughout frame sizes as well as packaged sub-assemblies. Contact Glenn W. Malme, Western Gear Corp. at Box 182, Lynwood, Calif.

New Direct Drive Chain Saws

Remington announces the Golden "Logmaster" and the Silver "Logmaster" chain saws with roller-bearing nose to boost cutting horsepower. These lightweight saws have air filter, positive rewind, thumb-button

High machine speeds? High temperature headbox stock? You need NASH Vacuum Pumps!



Air from the suction rolls on paper machines carries with it substantial quantities of moisture. This considerably reduces the effective air handling capacity of any vacuum pump except the Nash. In the Nash Vacuum Pump, because of the unique principle of operation, the bulk of this vapor is effectively condensed inside the pump. The total capacity of a Nash is therefore increased.

When you specify a Nash Pump it can be closely sized to the job. It is not necessary to select an over-sized unit, because the rated capacity of the Nash may be relied upon.

That is one of the reasons why Nash Vacuum Pumps are installed in over a thousand leading Paper Mills. An engineer from Nash will be glad to survey your mill, and make recommendations, entirely without obligation to you.

NASH ENGINEERING COMPANY

441 WILSON ROAD, SO. NORWALK, CONN.

oiler and muffler with built-in spark arrester. The gasoline powered saws come with Router chain as standard equipment. Oregon Chipper chain and sprocket is supplied at no extra cost if specified on order. Write to Mall Tool Co., Div. of Remington Arms Co., Inc., 25000 S. Western Ave., Park Forest, Ill.

New Motor Protecting Relay

A precision instrument that unfailingly protects any 3-phase, induction motor against failure due to shaft overload, voltage unbalance and/or single phasing, has been announced by Electrical Service Co., Ardis-Heights, Greenville, Tex., manufacturers of transformers and unit substations.

The instrument, Type TS Motor Protecting Relay, employs the basic principles of symmetrical components to effect a drop-out of any motor, that approaches the stage of dangerous overheating from either one or any combination of all three of the above faults. It is manufactured to extremely close tolerances, to meet the name-plate data of the motor for which it is intended; and is available in any of the standard NEMA type enclosures, i.e. each unit is custom built.

Full information is available. Enclose name plate data and type enclosure required if quotation is desired.

Gilbert and Nash Model 464 Planetary Guide is engineered to meet *your* specific requirements. Model 464 Planetary is our finest mechanical guide . . . dependable and trouble-free. The waterproof, oil-immersed anti-friction unit is ideal for dryer felt or wire guiding service. Model 464 Planetary Guide is especially effective at sustained high speeds, 900 fpm to 2500 fpm.

Contact your technically-trained Gilbert and Nash representative. No obligation, of course.

GILBERT and NASH company

Appleton, Wisconsin

Southern Engineering Firms are Merged

Two of Texas' best known consulting engineering firms have merged. These are H. E. Bovay, Jr., Consulting Engineers, and Reg F. Taylor, Consulting Engineer. The Bovay firm name will be retained.

Mr. Taylor, native of Toronto, Ont., will serve as engineering consultant in the organization and his staff will become a part of the Bovay staff at 5009 Caroline St., Houston, Tex. In the Bovay organization, with branches in Spokane, Wash., and in Baton Rouge, La., are about 170 employes.

Partners in the Bovay firm, all specialists, are H. E. Bovay, Jr., Bennett W. Burns, C. A. Lawler, Richard D. Robertson and W. N. Pauley. This organization has had a spectacular rise in eleven years providing services in several states and Latin America. Mr. Taylor and his staff have an experience record of 38 years.

New Mason-Neilan Sales Executive

A. Blair Powell is new general sales manager and three new regional sales headquarters have been established by Mason-Neilan, division of Worthington Corp., announces Mr. Carl W. Gram, Jr., vice president. Mr. Powell graduated from Univ. of Pittsburgh in 1934, and in 1937 joined Mason-Neilan as a sales engineer. His headquarters are in Norwod, Mass.

Warren F. Priest is appointed Eastern regional manager supervising Boston, Buffalo, New York, Skaneateles, Philadelphia and Pittsburgh offices, E. Putnam Head becomes Southeastern regional manager supervising Atlanta, Birmingham, Charlotte and Jacksonville offices, and Alex M. Thackara is promoted to West Coast regional manager with responsibility for Los Angeles, San Francisco, Seattle, Denver, Salt Lake, El Paso and Phoenix offices. In addition, Malcolm D. Duncan is manager of a new Jacksonville, Fla., office.

Raybestos-Manhattan Builds Lab

A new laboratory has been constructed by Raybestos-Manhattan, Inc., at its Stratford, Conn., plant for development and testing of Ray-Bond adhesives, coatings and sealers made by its adhesives department.

Ray-Bond adhesives, protective coatings and sealers constitute a new line developed by Raybestos-Manhattan and offered for general industrial application in July 1956.

LITERATURE

Jungle Wood for Jordan Fillings

Available on request to John W. Bolton & Sons, Inc., Lawrence, Mass. is their new, illustrated folder describing Bethabara wood and the natural properties of this species that make it ideally suited as a separator material in Jordan fillings.

This wood from the tropical jungles of South and Central America has made an outstanding record of performance in Bolton plug and shell fillings for many years. Strength and density of Bethabara largely responsible for this. Dramatic comparison of its strength and toughness can be found with domestic white oak, which Bethabara exceeds in bending strength by 67%, and in bearing strength by 74%. It also has 49% greater resistance to shock, and 76% greater stiffness.

Film on Industry Career Is Available from APPA

Reports from companies having the film "Your Career in the Paper Industry" show an enthusiastic response from educators and guidance counselors at the junior high school and high school levels.

Prints of the film are still available. They may be purchased at $115.00 per print from the American Paper and Pulp Assn. "Giving them to your local school guidance program to be one of your most economical and rewarding community relations and recruitment efforts," says Robert E. O'Connor, assistant executive secretary, APPA.

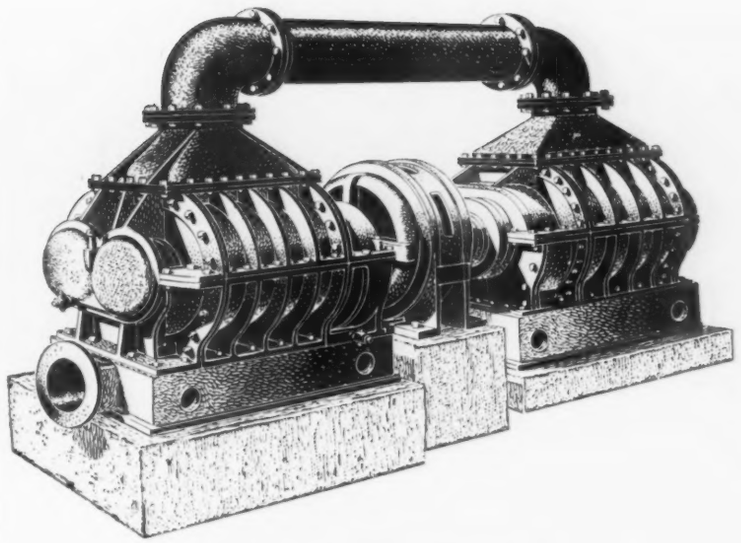
Stock Valve Film

A new film entitled "Pulp Stock Valves" has been released by Crane Co. The 16-mm black and white sound movie, which has a showing time of 12 min., is available for showing free of charge.

The film shows fluid handling problems and solutions in the pulp and paper industry, particularly those where pulp stock is of varying consistency and corrosiveness. Advantages of the new Crane stainless steel pulp stock valves with weight-saving design are shown.

PVC Valves and Fittings

A 16-page illustrated bulletin on polyvinyl chloride (PVC) valves and fittings has been issued by Walworth Co. The bulletin presents four pages of application tables on the performance of normal impact PVC and high impact PVC valves and fittings for handling about 315 differed fluids that attack other materials. Four tables give data on physical properties, recommended working pressures and effect of temperature on working pressure. Write to: Walworth Co., 60 E. 42nd St., New York, N. Y.



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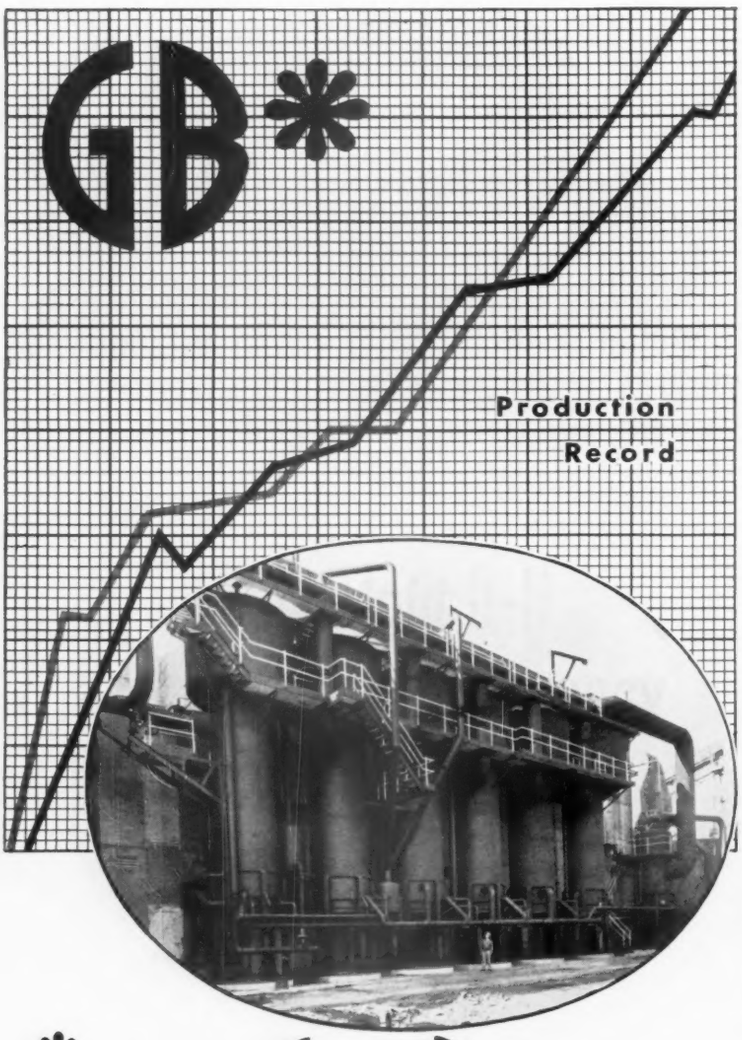

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"Industrial research amounts to 1½% of gross national product. It has become one of the nation's largest businesses. It has grown from a romantic scientific adventure to one of the nation's basic industries. It has become an integral part of a company's operations and an important factor in competitive strength." —**E. DUER REEVES**, exec. vice pres., Esso Research and Engineering Co.

How Prospects Look

"It is my opinion that the pulp and paper industry in Canada will operate close to capacity during this year. It may, however, happen that there will be some decrease in the consumption of pulp and paper products on this continent during summer months. Whether or not this can be offset by exports to overseas markets will depend on availability of North American dollars across the seas and of adequate shipping.—**D. W. AMBRIDGE**, pres. Abitibi Power & Paper Co.

The Water Problem

"Those who promote the concept that government should become all-controlling of rights, duties and opportunities of the individual, do a disservice to the English language when they characterize themselves as liberals. For my money they are the greatest reactionaries of our time . . . As to perhaps our number one resource problem, if government does not have the intelligence to provide for the regulated use of water in the public interest, by what concept does it have the intelligence to itself take over the responsibility for achieving such productive use."—**IRVIN L. PETERSON**, Assistant Secretary of Agriculture.

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DAHLGREN FORMS COMPANY—Thage Dahlgren, former manager, Paper Div., Pioneer Salt Co. and Pioneer Chemical Works, Inc., Philadelphia, has formed Dahlgren Chemical Co., Conshohocken, Pa., to serve pulp, paper and allied industries with quality chemical products. Before his 11 years with Pioneer, Mr. Dahlgren was with W. C. Hamilton & Sons, Peter J. Schweitzer, Inc., Gardner Richardson Co. and the Richardson Co.

NEW SURFACE ACTIVE AGENTS—A new "J" series added to Olin Mathieson Chemical Corp.'s Poly-Tergent line of nonionic surface active agents has a temperature range of −32 to 212° F. One member, Poly-Tergent T-500, can be used at the boiling point of water without serious loss of its surfactant properties. All are good wetters, detergents and dispersants. They are available in 5 and 55 gal. drums and in tank cars. Write to: Olin Mathieson Chemical Corp., Industrial Chemicals Div., Baltimore 3, Md.

NEW CHLORINE SUPPLY—The Industrial Chemicals Division of Olin Mathieson Chemical Corp. will market all of the chlorine output of the new chlorine-caustic soda plant being constructed by Kaiser Aluminum and Chemical Corp. at Gramercy, La., according to John O. Logan, vice president and general manager of the Olin Mathieson division.

Scheduled for completion this fall, the plant will have a capacity of 100 tons per day of chlorine and equivalent caustic soda. The caustic will be used by Kaiser Aluminum. This makes a fifth Olin Mathieson shipping point for chlorine in the South.

SOLVAY PRODUCTS are detailed in a new book covering the entire line of alkalies and chemicals, including uses, markets, physical and chemical properties, packaging and handling and storage of the Solvay line. Ask for "Products Book" from Dept. PB, Solvay Process Division, Allied Chemical & Dye Corp., 61 Broadway, New York 6, N. Y.

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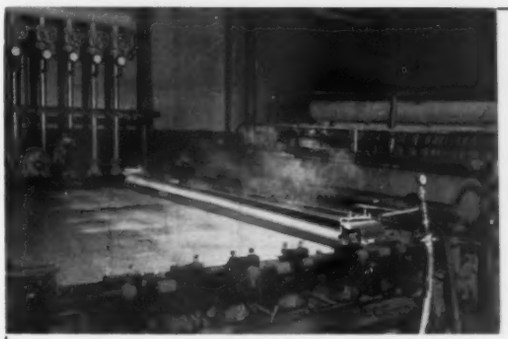

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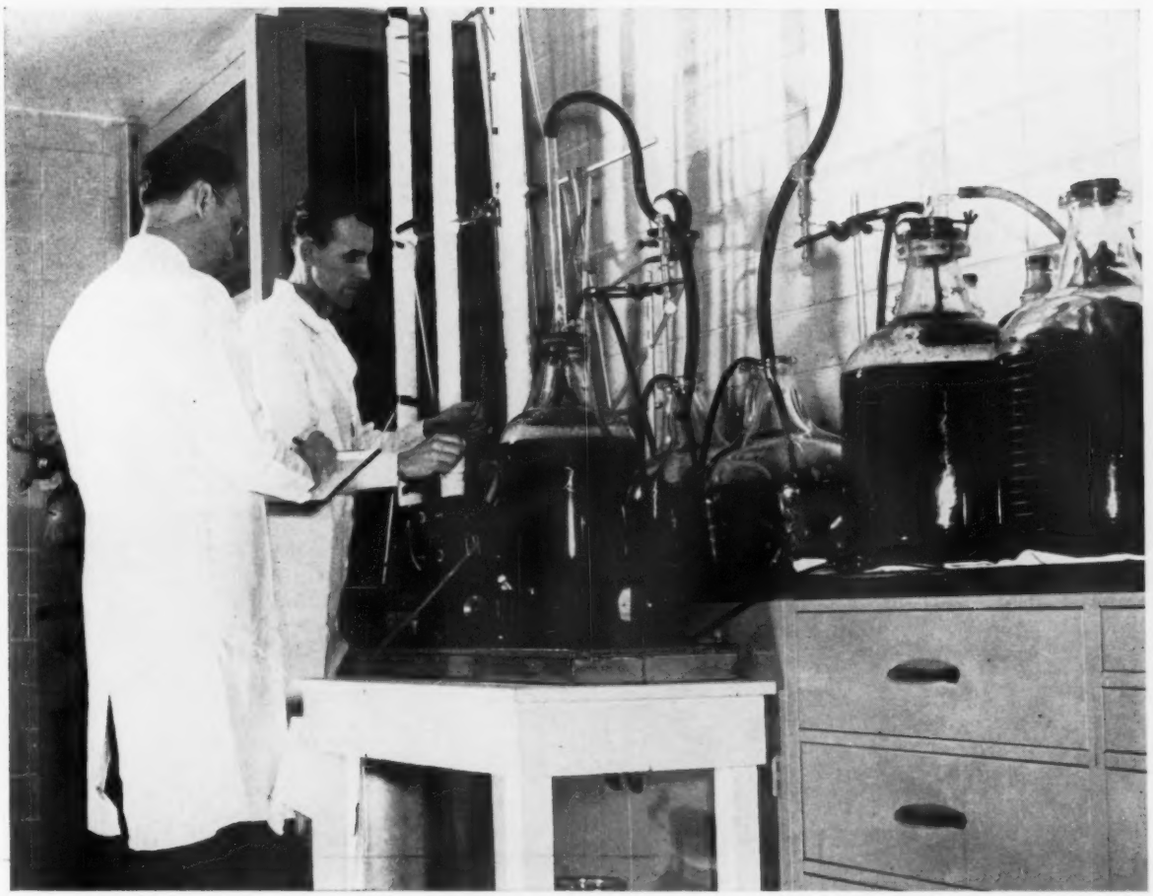

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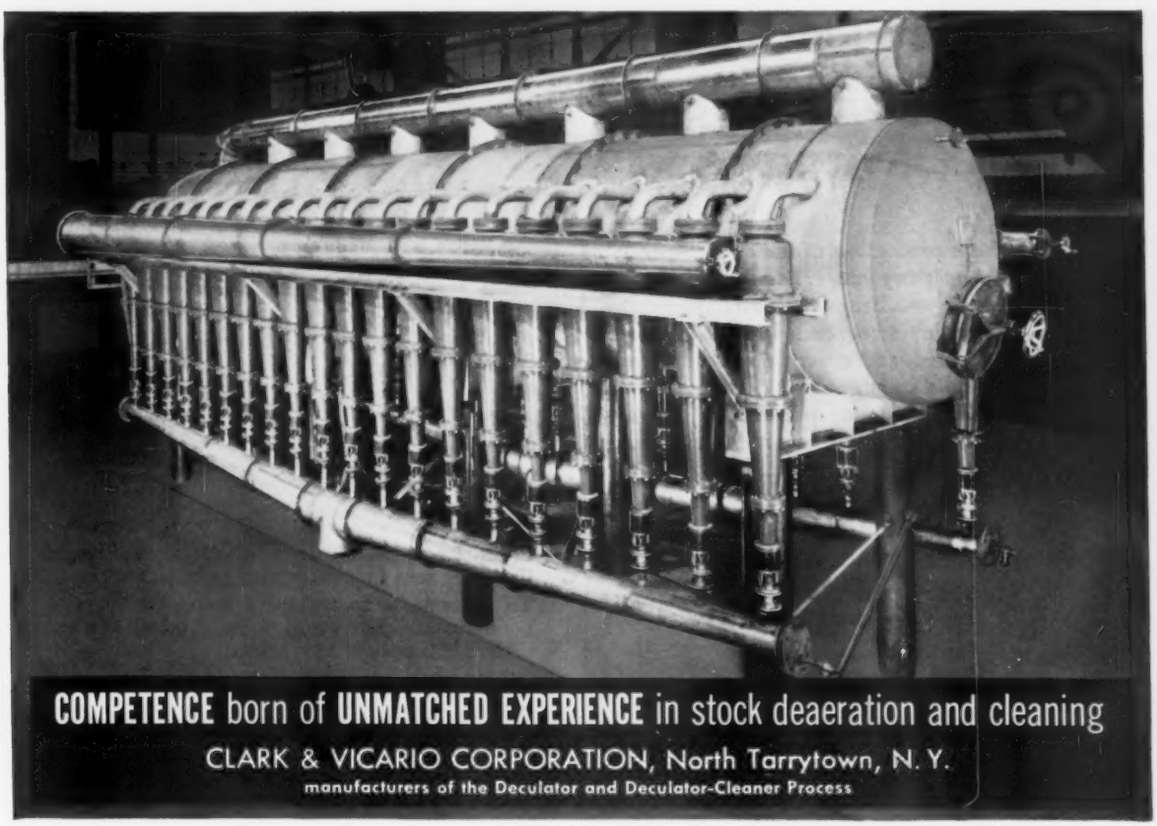

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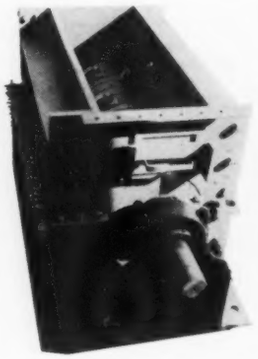

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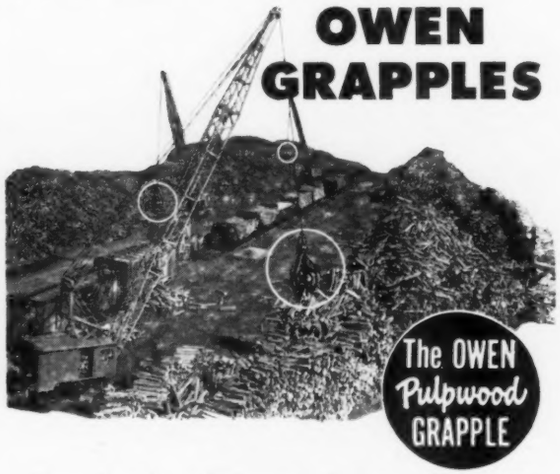

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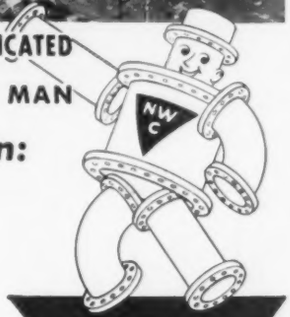

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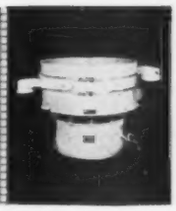
SCREENING NEWS



Weyerhaeuser Uses 27 SWECO Separators To Screen Water for Hydraulic Barkers

Hydraulic barking in the forest products industries has created new problems in suspended solids content of water – but Weyerhaeuser Timber Company has solved its water screening difficulties with fast new SWECO Vibrating Screen Separators.

Weyerhaeuser Timber Company uses 48" diameter SWECO *Separators to solve its effluent screening problem in hydraulic barking operations.*

Weyerhaeuser is using a total of 27 SWECO units – all 48" diameter – throughout its vast timber operations in the Northwest.

The SWECO Separators, operating with 105-mesh wire screen cloths (.0665" opening) clean 200 to 500 gallons of input water and effluent a minute. They are used to screen water being supplied to the barkers – to keep suspended solids from damaging pumps and other components. After the water has been used by the barkers, the SWECO units screen the effluent to keep it from clogging mill ponds.

Particles of bark recovered in the SWECO screening process are used as fuel in company power plants.

Screening Analysis and Recommendations Available

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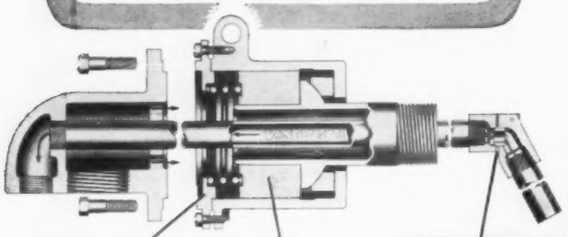

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SYPHON ELBOW — Permits use of straight pipe for syphon. Can be inserted or withdrawn right through the joint.

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The LAST WORD PULP & PAPER EDITORS' PAGE

Magazines and Newspapers—Study in Contrast

What if magazines like **Time, Life, Look, SatEvePost** and others took off with a campaign of attacks on book or magazine paper manufacturers as a bargaining "tool" to try to knock down the price of the paper they use? Not just in their editorial columns, but in the news columns and space devoted to news or articles?

That, of course, is what some newspapers are doing. This seems to have become almost an automatic performance of the newspapers, triggered off by any rise in price, at any time. It has been going on for many years. There have been only two newsprint price advances in the past five years, but these weren't missed.

Just recently PULP & PAPER learned on good authority in Washington, D.C., that a Michigan Senator is shouting for a newsprint price investigation because he needs a sensational campaign "issue" next fall, or he is going to be beaten by the Governor Williams-Walter Reuther combine.

We are not surprised to find President P. M. Fox of St. Lawrence Corp. writing as follows:

"U.S. newspaper publishers, unlike publishers in other countries, seem to have acquired a habit of grievance and self-pity not unlike that of a man afflicted with the delusion that the world owes him a living."

It may develop that the Michigan Senator, worried over his forthcoming campaign, is going to injure, rather than help, the American press which he claims to be serving.

What a contrast between these goings-on and the relations between magazines and their paper suppliers. Take just one example—the millions of dollars which Time Inc. is investing in research work to find better ways of making printing papers.

This cooperative spirit has undoubtedly been a big factor in improving the news and picture magazines—so they themselves gain more advertisers and more readers. Paper manufacturers have contributed to this improvement. It might be interesting to compare the technical advances of magazines vs. newspapers in recent years and see which field is going ahead fastest.

Ten Reasons for Mergers

As in almost any other type of business transaction, mergers may have their good and bad points. In the mergers that have taken place in the pulp and paper industry in the past few years—probably approaching 100 of them by last count—the good points seem to be very much in the ascendancy.

This is very important to the employes and to the communities, as well as to stockholders and to the industry at large. If a merger lessens a mill's relative importance in the business or if new management is less vitally interested or lacks proper experience, that can be a handicap.

But from Blyth & Co., which has assisted in quite a few mergers in this industry, our editors have been advised of ten good reasons for mergers. Some of these have been mentioned before editorially on this page, but they are worth recounting:

1. Integration to obtain economies and quality control.
2. Diversification to offset fluctuations and introduce new lines.
3. Bigger budgets for research and engineering.
4. Growth under able and dynamic management.
5. Wider distribution through wider dispersion of plants.
6. Age and health of founders or principals.
7. Higher equity value where a sale is required.
8. Marketability created for closely held equity issues.
9. Acquisition of able management personnel.
10. New capital made available for expansion.

Everyone who works in this industry, and it seems like very few have not been touched in the wave of mergeritis, have good reason to consider these points in relation to the scores of mergers that have taken place.

Industry's Debt to Intelligent Legislators

If you are tempted to speak disparagingly of people who are willing to go into politics and serve in legislative bodies, consider Senate Bill No. 470, introduced this year in the Washington State Legislature.

It provided that any industry (more than 1,000 plants of all kinds) that disposed of waste material in state waters, no matter how treated or under what conditions, and even with a permit issued by the State Pollution Control Commission, would have to pay $10 per ton for each ton of such waste!

A senatorial fisheries committee approved the measure. Fortunately, the senate rules committee failed to move it further, and it died in that committee. Over 1,000 industries and their many thousand employes can thank the good sense of that committee.

Frightening isn't it? But in Georgia recently a bill that would so drastically limit the amount of timberlands a pulp and paper company could own as to virtually put them out of business, got just about as far. Something like this also almost happened this year in one of the Gulf states.

Another bill that almost passed a Southern state legislature would have made anyone who put any waste material of any kind into any stream liable to a fine of $500 for each offense—and each 24-hour day was to be considered a separate offense.

The legislative bodies of America are the heart of the American political system. Intelligent and fair-minded legislators are always needed. Don't ever sell them short.

Cultivate That Sense of Humor

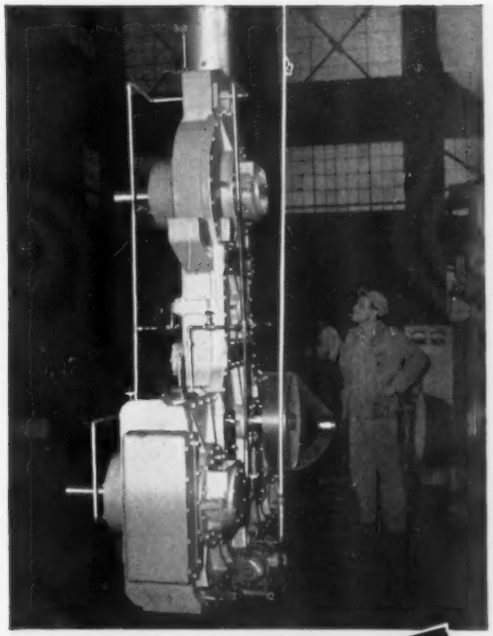
So says M. J. Foley, president of Powell River Co., and we think his reasons are worth noting here on our "entrenous" page.

He says too many people fail to develop a sense of humor through indifference or selfishness or both.

A good sense of humor inspires you to criticize and reprimand in a constructive manner. You will have an open mind to suggestions and will be tactful toward those who do not measure up and give full credit to those who do.

Even keeping promises, and doing so on time, result from developing this sense, says Mr. Foley. "Your door, like your mind, will always be open . . . to complaints and gripes. You will admit it when you are wrong"

So there's more to a sense of humor, perhaps, than you have been thinking. As he puts it, all—yes, all—qualities of leadership stem from this well developed sense. Good leaders all have it, of that we are sure.



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(5) Dryer bearings located outside dryer gears for easy removal.

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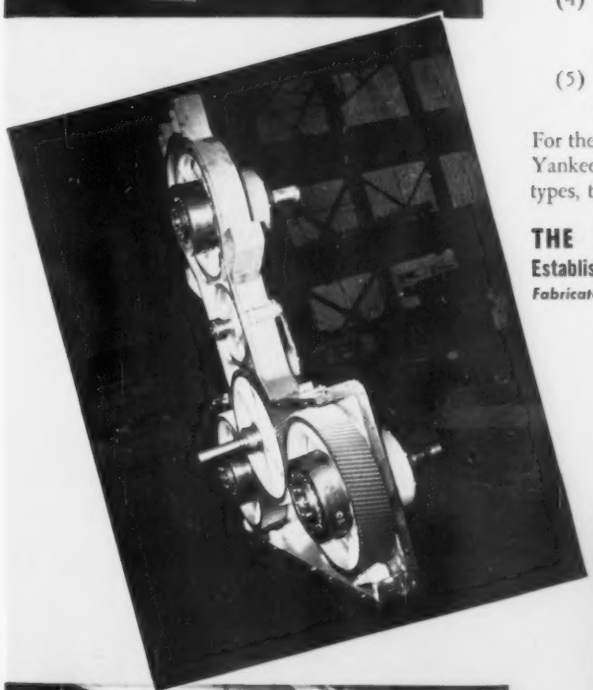

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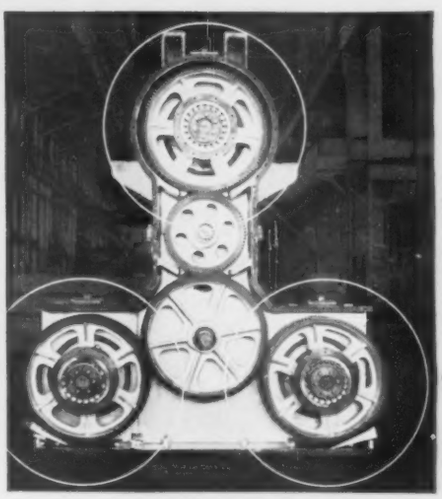

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